REPORT

OF THE

Ontario Housing Committee

INCLUDING

STANDARDS FOR INEXPENSIVE HOUSES ADOPTED FOR ONTARIO

AND

TYPICAL PLANS

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

To His Honour, Colonel Sir John Strathearn Hendrie, K.C.M.G., C.V.O.,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour,—I herewith beg to present for your consideration the Report of the Ontario Housing Committee.

Respectfully submitted,

W. H. Hearst,

Prime Minister.

To the Honourable Sir William Hearst, K.C.M.G.,

Prime Minister and President of the Council.

Sir,—I have the honour to submit for your approval the Report of the Ontario Housing Committee.

I have the honour to be, Sir,

Your obedient servant,

J. S. Willison,

Chairman of the Committee.

Copy of an Order-in-Council approved by His Honour the Lieutenant-Governor, dated the 7th day of June, A.D. 1918.

Upon the recommendation of the Honourable the Prime Minister, the Committee of Council advise that the following persons be appointed a sub-committee of the Organization of Resources Committee to enquire into and report upon the housing situation, and to make such suggestions and recommendations as the circumstances may admit and the said Committee may deem proper:

Sir John Willison, Chairman.

Mr. G. Frank Beer.

Rev. Peter Bryce.

Mr. E. J. B. Duncan.

Mr. J. Gibbons.

Mr. M. J. Haney.

Mr. H. V. F. Jones.

Capt. F. H. Marani.

Mr. J. H. McKnight.

Mr. Thos. Roden.

Mr. H. C. Scholfield.

Mr. H. H. Williams.

Professor C. B. Sissons, Secretary.

FOREWORD.

In the process of securing information and arriving at the conclusions herewith presented, the Committee has received generous assistance from various public bodies and private organizations, as well as from individuals. It wishes to express its thanks to all who have given assistance and especially to the following:

Mr. Thomas Adams, Town Planning Adviser, Commission of Conservation, and Expert on the Housing Committee of the Cabinet; Rev. Gilbert Agar, Secretary, The Social Service Council of Ontario; Mr. W. S. B. Armstrong, Secretary, Toronto Housing Company; Dr. Horace L. Brittain, Director, Bureau of Municipal Research, Toronto; Mr. A. Chapman, Toronto; Mrs. A. C. Courtice, President, Home and School Council, Toronto; Dr. G. C. Creelman, President, Ontario Agricultural College; Mr. Ewart G. Culpin, Secretary, Garden Cities and Town Planning Association, London, England; Mr. J. A. Ellis, Director, Ontario Bureau of Municipal Affairs; Mr. H. B. Dunington-Grubb, Toronto; Mrs. H. B. Dunington-Grubb, Toronto; Mrs. L. A. Hamilton, Toronto; Dr. C. J. O. Hastings, Medical Officer of Health, Toronto; Mr. R. H. Macdonald, Montreal; Professor R. M. MacIver, University of Toronto; Mr. A. S. Mathers, Toronto; Dr. J. O. Miller, Principal, Ridley College, St. Catharines; Mr. P. H. Mitchell, Managing Director, Toronto Housing Company; Dr. Margaret Patterson, Toronto; Dr. W. A. Riddell, Superintendent, Trades and Labour Branch, Toronto; Miss J. M. Robson, Toronto; Mr. F. N. Stapleford, Secretary, Central Neighbourhood Workers' Association, Toronto; Mr. H. F. Strickland, Chief Electrical Inspector, Hydro-Electric Power Commission of Ontario, Toronto; Mr. Lawrence Veiller, Secretary, National Housing Association, New York City, U.S.A.; Mr. Henry Vivian, Chairman, Co-Partnership Tenants, Limited, London, England; Mrs. J. E. Wetherell, Toronto.

The plans and specifications which appear in the report were prepared under the supervision of the Committee by Mr. H. R. Dowswell, A.R.I.B.A., co-operating with the firm of Messrs. Banigan, Mathers and Thompson. Valuable suggestions were also received from Messrs. Burke, Horwood and White, Mr. J. P. Hynes, Messrs. Shepard and Calvin, and Messrs. Eden Smith and Sons. In the preparation of the standards the Committee wishes to acknowledge the assistance of a committee of the Ontario Association of Architects consisting of its President, Mr. C. H. Acton Bond, and Messrs. J. P. Hynes, R. K. Shepard and A. F. Wickson; also that of Mr. Dowswell throughout the Chapter "What Constitutes a House."

The Committee wishes especially to thank Mr. C. H. Acton Bond and Dr. Horace L. Brittain who assisted in the laborious task of judging the thirty-six essays submitted in the competition.

The least part of the work of the Committee has been the investigation of actual conditions. From the first these were admitted as demanding remedy. The

purpose has been rather to analyse the factors which have contributed, and, in default of wise legislation and administration, will continue to contribute to produce bad housing. No single measure will be found equally effective in all circumstances. The land, construction, transportation, town-planning and finance are inter-dependent factors whose incidence varies with time and locality. Hence specific recommendations have not always been possible, and have been regarded as less important than the discussion of underlying principles and their illustration by reference to housing reforms actually in progress.

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Chapter I.

THE NEED.

On June 7th, 1918, as a result of action taken by the Great War Veterans Association, and subsequently of representations made by the Veterans, the Toronto Board of Trade, the Manufacturers Association, and Organized Labour, an order-in-council was issued, authorizing the formation of the Ontario Housing Committee, "to enquire into and report upon the housing situation, and to make such suggestions and recommendations as the circumstances may admit and the said Committee may deem proper."

The first step in seeking a solution of the housing problem was to ascertain the extent to which a shortage existed. The following circular letter was addressed to the various urban municipalities in the province, asking for particulars of the housing situation:

> "In the public interest it is highly desirable that the fullest possible information be obtained as to the housing conditions in the various cities and towns of Ontario, as well as in rural districts, with a view to suggesting immediate remedies to meet the present crisis, as well as arriving at definite conclusions in respect of a permanent policy for the future.
>
> We should welcome, therefore, any information from you as to the actual situation in your municipality, as well as any suggestions you may be prepared to make as to how best to meet the situation. Perhaps answers to the following questions will serve to bring out the desired information.
>
> 1. To what extent is there a housing problem in your municipality?
> 2. Upon what body, if any, other than private individuals, lies the responsibility of meeting the present shortage of houses? Please state reasons for your opinion.
> 3. In your opinion can private enterprise be depended on to meet the existing demand?
> 4. What practical steps, if any, have employers in your municipality taken to meet the need of housing accommodation for their employes?
> 5. Has building been undertaken by the municipality or co-operative societies?
> 6. In such enterprises, individual and collective, have town planning, architectural appearance and public health been considered?
> 7. Are you disposed to favour the partial or total exemption from taxation of workmen's houses for a period of years, in order to stimulate building?
> 8. What further suggestions, if any, have you to make to meet the particular requirements of your district?"

The information received from municipal authorities reporting a shortage is here summarized. In some cases this is supplemented by information received from private sources. Views expressed on other matters than that of the need are not reproduced.

Aurora:

While the reply received from this municipality in July stated that the housing situation was satisfactory, a letter from a resident of the date October 31, 1918, throws a somewhat different light on the subject: "One man professing to have his finger on the pulse of the building situation in town gives impressive economic reasons to prove that no further building should at present be undertaken, stating that the housing accommodation is ample. On the other hand is the standpoint of the people who are in actual need of suitable houses. So far as I can gather, the statement that accommodation is ample is true only in so far as it means that people are not actually in the streets. The town is full of old houses, antiquated in type, with no modern conveniences; and when nothing else is to be had people must perforce live in them. Quite a number of houses of the $3,000 to $3,500 class have been put up in the last five years or so—good brick houses, seven, eight and nine rooms—with heating, plumbing and lighting conveniences, and so the need for that type of house would seem to be fairly well filled, though I understand that even for them there is still a moderate demand. But I am assured by one of the leading business men that the need is great for houses of a smaller type, say six room houses of comparatively low expense, and yet comfortable and convenient."

Brantford:

No reply was received from the municipality, but on request the Secretary of the Housing Committee met a committee of the Board of Trade which had the matter of housing under consideration. In view of the scarcity of houses estimated by the members of the committee at from 200 to 700, a canvass had been made of the city to find how many rooms in private houses were available for employees of the various factories. In addition the Dominion Steel Products Company was planning to erect some 238 houses for its own employees on a new development of about forty acres adjacent to the works on the outskirts of the city.

Cobalt:

No reply was received from the municipal authorities. However a letter received from a citizen described conditions as most unsatisfactory.

Collingwood:

The Secretary of the Board of Trade stated on October 4th, that, while the people all have shelter, Collingwood could very well stand a considerable number of workmen's houses, since many individuals and families are living over stores and in rooms.

Courtright:

Under date of July 8th, the following letter was received from the Manager of the Western Salt Company: "We note that you are collecting information regarding housing conditions in Ontario, and as we have a very severe shortage of houses in this village, it is handicapping our securing labour for our plant here very materially."

Galt:

Owing to the serious nature of housing conditions in Galt, a number of business men and manufacturers in July formed a committee to study the situation and report to the Council of the Board of Trade. This report embodied recommendations that the Municipal Council avail itself of the terms of the Provincial loan, and that bonds to the extent of $50,000 be issued.

Guelph:

The housing shortage developed to such a degree that it had become a serious handicap to the business men and manufacturers in Guelph. So acutely was this felt that in July a Home-builders Association was formed by a number of representative citizens to deal with the situation. The plan eventually was abandoned as it was found that the houses were going to cost more than was originally contemplated.

Hamilton:

On July 12th, the Assessment Commissioner wrote as follows:

"Our department is of opinion that the situation is not what might be termed acute here in Hamilton. There is a decided scarcity of small detached houses, and there is undoubtedly a somewhat congested condition among the artisan and labouring class on account of two or more families occupying premises or houses which previously were tenanted by one."

A Town Planning Board has been appointed, consisting of the Mayor and other representative citizens. A very comprehensive program has been drawn up, and a town planning conference was arranged for December, but had to be postponed owing to the influenza epidemic.

Hawkesbury:

On July 8th the Mayor wrote: "There is a great need of comfortable houses for the working men."

The following communication was received from The Riordon Pulp & Paper Company Limited, under date of July 12th:

"This company find it necessary to put up houses for their employees and if you have any information or literature bearing on the subject of industrial housing, we would be very much pleased to have you send us same. It is our desire to have employees feel the benefit of owning their houses."

The company has since planned a development and proposes to begin building in the spring.

Kincardine:

On July 11th the Mayor wrote:

"There is not a vacant house in our town. Private enterprise cannot be depended on to meet the existing demand as the returns on the present cost of building are not adequate to the outlay. The employers met in an endeavour to formulate plans to meet the housing problem, but were unable to carry out any definite scheme owing to the excessive cost of building."

In order to counteract the shortage of houses and the surplus of stores in small towns, the Mayor suggested that some of the business blocks be turned into apartments by allowing them a certain exemption from taxation.

London:

According to the press despatch of September 18th, "the housing problem in London threatens to grow acute. It is the middle-class householder who is particularly affected. . . . . The number of houses which are now being shared by two families in London is enormous, and the prospect is not encouraging for the soldiers who have married since the outbreak of war, and who are hoping to set up houses of their own on their return to civil life, The building of house property is of course suspended, and the only relief after the war ends will be found in the moving away of men who are in London temporarily on war work of one kind or another."

Midland:

In his reply of July 9th, the Mayor of Midland stated: "There is a very serious problem facing the town. At the present time one hundred houses if available could be used, 75 per cent. of which would be for working men, and the other 25 per cent. for those in better conditions."

Niagara Falls:

On July 31st the Mayor wrote:

"We are desperately in need of additional housing accommodation, and with the increased development in this neighbourhood conditions promise to become worse instead of better, even in the face of the fact that local builders are doing everything possible to meet the demand." The Mayor further pointed out that the shortage would not be appreciably affected by the closing down of the manufacture of munitions.

From another source information was received that the main shortage was of houses "within the financial range of the working class."

The following advertisement appeared in a Niagara Falls paper during August:

"Five dollars reward for anyone telling me where I can rent a house."

New Liskeard:

This municipality reported on July 11th:

"The houses to rent in this place are few and far between; except poorly constructed ones. At the present time and for some time past there has been a shortage of modern and comfortable dwellings to rent."

Ottawa:

From the Ottawa Journal of July 29th and July 31st, 1918, respectively, the following extracts are quoted:

"Twenty-one thousand residences to house a population of 110,000, or approximately 25,000 families. In a nutshell this is the housing situation in Ottawa. In Dalhousie Ward, where the population is over the 20,000 mark there are only 4,000 residences. Ottawa Ward with more than 10,000 people, only boasts 1,700 houses; and St. George's Ward, with a population of 13,329 has only 2,705 houses. These figures include apartment suites as well as houses."

"Authentic figures point to a serious condition in this city. Very few residences have been erected during the past few years; vacant houses are at

a premium and the population is increasing by several thousand each year. . . . . It may be that the present conditions are only temporary, but it is doubtful."

Especially since the influenza epidemic the municipal authorities have taken an active interest in the situation.

Paris:

In July the Mayor reported a shortage of about twenty-five houses. At the time of writing employers were building four double houses, and two leading firms had approached the Council on the subject of what both termed a "serious shortage" of houses in the town.

Parry Sound:

On July 17th this town reported:

"We have in the municipality a considerable housing problem at this time, which is however not so acute as it was a year or two ago when the construction work in connection with the Nobel Munitions Plant was at its height. Since this plant began operations, however, the matter has settled down to one of a more steady nature, and while there is still a great scarcity of medium priced houses there is not the suffering that there was earlier."

This was followed by another letter on July 20th:

". . . . Since writing you a few days ago there has loomed on the horizon a proposition which is likely to place our housing problems in a somewhat different light to what they were when I wrote you a few days ago. We have a smelter here which has been idle for some years, and which I am led to believe upon good authority is now likely to again commence operations within a very short time. Inquiries are beginning to come in to the municipality from men who will be in charge of this industry, regarding house accommodation, school accommodation, etc. . . ."

Pembroke:

On July 20th the Mayor wrote:

"Owing to the disastrous fires that visited our town on the 18th of June and 15th of July, the housing situation is a very serious one. Before those fires houses were at a premium."

Perth:

In the Perth *Courier* of July 12th, in an article entitled "Lend a Helping Hand," the following statement is made. "In Perth it has been known that new industries could not locate here without a better system of electric power for their disposal. This is now assured. The next feature, however, is the securing of homes to house the employees. They must be had if the town is not to remain stationary."

Port Credit:

A committee from the municipality stated that the Council desired to avail itself of the Government loan, wishing to expend about $25,000 in housing.

Preston:

On July 27th the Secretary of the Board of Trade wrote: "This town is in great need of forty or fifty workmen's houses."

Sarnia:

On July 13th, the Mayor stated:

"There is at present a great scarcity of houses in this city."

Sault Ste. Marie:

The following information is contained in the Mayor's reply of July 8th:

"There is a serious scarcity of houses in this vicinity at the present time. . . . . The population has increased at least 2,000 in the last two years, which would require at least 400 houses, counting five persons to a house. While I have not obtained accurate information as to the number of houses built in that length of time, I am of the opinion that it will not exceed 100. A small number of people are at present living in tents until houses can be secured. There is also a number of people living in temporary buildings on the outskirts of the City, which will not be habitable in the winter months unless considerable improvement is made on them. A conservative estimate of the number of houses required to take care of the present requirements and the natural increase during the next year is at least two hundred or two hundred and fifty."

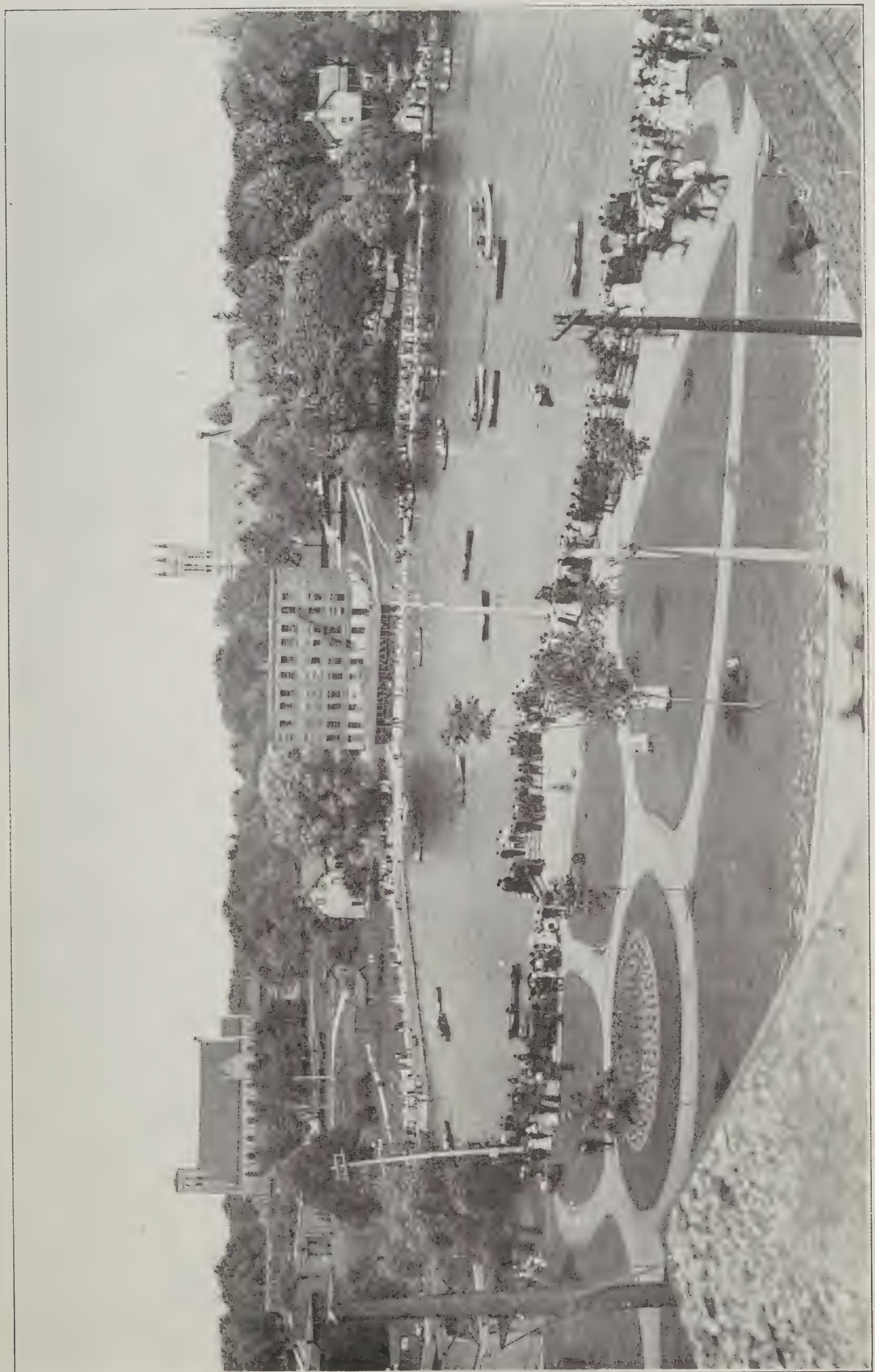
Stratford:

While on July 9th, the Mayor wrote, "We have no housing problem in Stratford at the present time, there being no shortage," the extracts given below from the report of the Health Committee of the Social Service Council, appearing in the *Beacon* on January 4th, 1919, tell a somewhat different story:

"1. After making some careful inquiry, however, from persons in the city who are reasonably conversant with the actual conditions of many workingmen's houses, we concluded that there are at least two hundred houses in this city which are unfit for human habitation, if you are going to, in any adequate degree, safeguard the health of this generation and of the children yet unborn.

2. A further fact appears in this connection, that there are possibly four hundred houses which are, technically speaking, out of condition. These houses are without proper foundations and have no cellars. There is no furnace, bath, sanitary closet or electric light, and possibly in very many cases there is a lean-to shed where the floor consists of a few loose boards thrown upon the earth. It is quite true that a house may lack almost every one or many of these essentials and yet people live healthily in it, but that is due more to the superb qualities of the occupants and the home maker, rather than to any real fitness of the house. Such places cannot by any stretch of fancy be called a good standard dwelling for any man to live in.

3. In further investigating the demands of a six-room house, suitable for a workingman's family, we found that in the judgment of those most fitted to speak, there is now in this city a demand for about two hundred six-roomed houses, with modern conveniences and renting for about fifteen to eighteen dollars per month. If these houses were available, they could be rented almost immediately. In connection with this demand, it is strongly felt by some who stand quite near to the industrial and labour situation that this number of houses per year will be actually needed for the normal growth of this city for some years to come.



By courtesy of Mr. Thomas Adams.

Beauty spot in Stratford, Ontario. Made from a frog-pond and a dump-ground through the enterprise of the Stratford Parks Commission.

If we are to take care of those who are now too poorly housed or whose houses are out of proper condition, there will be needed an additional four to six hundred modern houses before we could say that Stratford housing conditions are up to a reasonably modest standard."

Sudbury:

The Mayor wrote in July: "Houses very scarce."

In September, in stating that the Council felt that it should ask for $100,000, the Town Solicitor wrote that "the need of houses in Sudbury for workingmen has been quite a problem for some time."

St. Catharines:

That a shortage exists sufficient to attract public attention is evidenced in the following item from the *Financial Post* of October 12, 1918:

"As the result of a public meeting of the citizens of St. Catharines last week, the city council has been asked to make application to the Ontario Government for a loan of $80,000 to be used in the construction of homes for workingmen under the Provincial plan. The city as a municipality will add $20,000. The money is to be borrowed at 5 per cent. interest and the Province will take city debentures as security."

St. Thomas:

In July the municipality reported no shortage, but a somewhat less satisfactory situation would seem to be indicated by these statements:

Kitchener *Record,* Aug. 21, 1918: ". . . . Very few houses for renting are available there (St. Thomas). An investigation recently made by Publicity Commissioner, H. P. MacMahon, found that while there were a number of houses for sale there were scarcely any that might be rented."

London *Free Press,* July 23, 1918: "Housing conditions in St. Thomas may compel the proprietors of the new industries to establish boarding houses until places can be found for the married men among the employees. A representative of one of the big factories appealed to the industrial committee to-night to help the management in finding houses for the incoming mechanics and others."

Tillsonburg:

Evidence of a housing shortage in Tillsonburg is given in the paragraph quoted below from a local newspaper:

"It is not a very good time to talk about building, but Tillsonburg is badly in need of a suitable class of tenement houses. Many families during the past few months who desire to locate here have been unable to do so because no houses were available for them. There is a demand right now for several medium sized houses and some provision should be made to supply it."

Toronto:

The Mayor of Toronto wrote on July 8th, that the matter had been transferred to the Medical Officer of Health to report.

In his monthly bulletin for May, Dr. Hastings had already reported in part as follows:

"One of the most urgent problems confronting Administrators of Public Health and Boards of Health is that of securing sufficient and satisfactory

housing for the people of their respective municipalities. The present war has forced upon governments the necessity for immediate action in this connection. The following condition now existing in Toronto indicates the necessity for prompt action in order to meet both present and after-war conditions.

It is a well-recognized fact that there is a dearth of houses suitable for workingmen at the present time in Toronto. This was to be expected with the increasing population and the supply not being equal to the demand. This has resulted in the doubling up of families in many of the old buildings that ought to be pulled down and replaced by proper habitations. This doubling up is undoubtedly for the purpose of escaping the high rents, which always follow where the demand exceeds the supply.

The lack of accommodation now felt will be augumented in the very near future, when the war ends and peace is declared. We shall probably within the next five years, have another 150,000 added to our population. That means some 30,000 families, taking the average of five to each family, to be provided with dwellings. This will necessitate at the very lowest calculation, 25,000 additional dwellings within the next five years, if a recurrence of the congested and unsanitary conditions which existed a few years ago is to be prevented. We should have an average of 5,000 of these lower renting houses erected every year, and there is no evidence of this provision being forthcoming. The records of the City Architect for the year 1917, show the number of dwellings erected was only 902, at an average cost of $2,500 to $3,000 each."

In the bulletin for June, the following statements had been made:

"There is in Toronto a great need for low-priced houses, the rental of which will be within the reach of the wage earner whose rent should range from 15 to 20 per cent. of his earnings, never exceeding the latter figure. The following budget has been considered an average guide for expenditure of the wage earner's income:

One day's wage for one week's rent.
Two days' wage for one week's food.
One day's wage for one week's clothing.
One day's wage for fuel, lighting and other incidentals.
One day's wage for saving and pleasure.

Obviously, it depends on the use of the last, whether or not he is to make a success of life.

"Toronto has, in the last five years, torn down or had closed up as unfit for habitation, 1,682 dwellings, and in less than one-half per cent. of these cases have new dwellings been erected, the balance of the grounds having been used for the erection of manufactories of different kinds and public buildings."

"Furthermore, in 1916 and 1917, there were 10,945 marriages registered in the City Clerk's office and in the same period only 1,551 dwellings erected."

Trout Creek:

The Town Clerk of Trout Creek wrote on September 10th:

"At present there are not enough houses to supply the demand."

Walkerville:

In a communication of July 11th, the acting Town Clerk stated that "there are no houses to rent in Walkerville that I am aware of."

Further light is thrown on the subject in a press despatch of date August 14th:

"Impressed with the possibilities of the Ontario Government's plan to loan money at 5 per cent. to municipalities to build homes for workmen, Mayor Hoare, of Walkerville, has instructed the Civic Finance Committee to report on the plan at the next council meeting. According to R. A. Holland, a former member of the Council, there is a shortage of 500 houses in the town. This condition, it is declared, is retarding the industrial growth of the town."

The Assessment Commissioner confirmed this statement of the shortage.

Welland:

The following passages from a letter of July 18th, from the City Clerk, indicate the conditions existing in that city:

"Two manufacturing concerns have spent many thousands of dollars in building and buying houses but even with all their expenditure the demands have not been met and some other manufacturers have taken stock in a house building company in order to help."

"Welland City is suffering seriously for lack of houses and to-day should have five hundred additional workmen's houses."

Weston:

In July the Town Solicitor reported a very considerable demand for small houses.

In an interview on December 17th, a prominent citizen of Weston stated that the difficulty in the case of Weston is that houses worth $5,000 to $7,000 have been built by speculators who found that they could sell these to advantage. Very few people have been building houses which could be sold for $3,000 or less. The result is that the people have been living in shacks or doubling up in larger houses.

Windsor:

All the border municipalities, owing to abnormally rapid expansion, are confronted with a serious housing problem.

On August 3rd, the Mayor of Windsor wrote:

". . . . During the past four years there have been erected hundreds of houses each year and this has not been sufficient to keep up with the demand, so that at the present time many families have to seek homes in Detroit on account of being unable to secure reasonably priced homes in the border municipalities."

This is also emphasized by a press despatch of July 15th:

"So serious has been the housing problem in Windsor and adjoining cities that the Dominion Government will be asked by the Border Cities Real Estate Board to back the municipalities in a debenture issue of $1,500,000, for the immediate construction of 1,000 workmen's homes. . . . It is estimated that 500 families have been compelled to 'double up' because houses are not available."

The fact that the following municipalities in addition have applied for information as to the terms and provisions of the Provincial loan would indicate that housing conditions there are not entirely satisfactory:

Barton Township.	Kingston.	Oshawa.
Carleton Place.	Kitchener.	Port Arthur.
Chatham.	Leaside.	Peterborough.
Charlton.	Lindsay.	Sandwich.
Dundas.	Listowel.	Scarborough Township.
Etobicoke.	Neebing Township.	Sturgeon Falls.
Ford City.	Orillia.	Westboro Village.
Fort Erie.	Oakville.	York Township.
Ingersoll.		

The Ontario Housing Committee did not think it necessary to carry on a further investigation. Some sixty municipalities, it will be noted, have recognized and admitted the need. In some of these including at least six cities, the shortage has been shown to be acute. In other places where the municipal councils have not acknowledged the need for more and better houses, it does not follow that housing conditions are satisfactory. It is a significant fact that in several places where officially a need was denied, privately or by social bodies it was definitely conceded to exist. The demand was found to be for houses of from four to six rooms, substantially built, but within the financial reach of the workingman. A comparatively large supply of houses of seven, eight or nine rooms, has resulted in the too prevalent custom of sub-letting.

The question naturally arose as to whether the shortage was only temporary and a result of the shifting of population to centres where munitions were being manufactured. This was undoubtedly a factor in causing congestion in certain places, and the conclusion of the war has brought a measure of relief in such cases.

The condition, however, was too wide-spread to admit of this explanation. It was considered to be largely the result of general war-time conditions, namely, the scarcity and dearness of capital, labour and material, hence the failure to replace the percentage of houses annually becoming unfit for habitation, or to provide new ones for the natural increase in population. The startling disproportion between the number of marriages recorded in Toronto, and the number of new houses built during those years, affords sufficient evidence of the situation created by the almost complete diversion of private capital from building.

It must not be inferred that the problem is regarded as merely the result of the war. The experience of older countries has been that the total number of suitable dwellings supplied, especially for lower paid workingmen, is normally insufficient to meet the need. The law of supply and demand working freely cannot consistently maintain adequate housing accommodation. In the present instance, however, the interruption of the normal production of houses has resulted in exceptional conditions which, in the opinion of the Committee, can be met only by exceptional measures.

Chapter II.

PUBLIC POLICY IN HOUSING.

The functions of Government have been widely extended in all enlightened countries during recent years. Gradually the State has assumed prerogatives which a century ago would have been regarded as seriously infringing on personal liberty. Acquiescence in compulsory education, factory inspection, old age pensions, workmen's compensation, restriction of the liquor traffic, control of railway rates, and more recently the acceptance of the principle of conscription, serve to indicate the extent to which the State is now permitted to exercise control over its citizens, provided such control is felt to be in the general interest. The touchstone of each new measure is its contribution to public welfare. By this test also must housing be tried.

Is it, then, in the public interest that the provision of shelter should be left entirely to private initiative? Admittedly the lack of open spaces, the absence of privacy as between families, or as between the sexes in the same family, the want of proper sanitation, and slum conditions generally, are a menace to the health and well-being, not only of the slum dwellers, but also of the residents of fashionable districts. The house-fly is no respecter of persons. The effects of vice and crime cannot be segregated. Recognition of this fact has led to restrictive legislation. Cities have acquired the right to condemn houses which are insanitary, and to prevent congestion of buildings and overcrowding of occupants. That these restrictive powers in themselves are inadequate has frequently been demonstrated elsewhere, and in Toronto recently an interesting admission has been made of the failure of good by-laws alone, however honest may be the intentions of the administration, to meet the situation. The Housing Commission of Toronto, thus described conditions of overcrowding, resulting from the shortage of houses:

> "A survey of 13,574 houses, in 14 representative districts, was made, in order to determine in how many of these two or more families were housed. All these houses were constructed as single family houses, and the 48 apartment houses, and 271 common lodging houses, were eliminated from the investigation. The dwellings under observation were found to contain 18,123 families, embracing 90,272 persons. In 4,383 homes, which contained 4, 5, 6, 7 or 8 rooms, there were two families. In 402 houses there were three families, or more, and in 3,954 homes, in addition to the regular families there were lodgers. Thus, out of 13,574 homes originally intended as single family houses, 8,739 contained 2, 3 or more families, or lodgers, and only 4,835, or 36 per cent. were occupied by single families, for which the houses were built. Moreover, as shown by this particular enquiry, there were no less than 1,538 dilapidated houses, that is, houses unfit for habitation, included in the 13,574 dwellings visited.
>
> One of the greatest difficulties in this, as well as in other large cities on the continent, is the insistence of foreigners on herding together, for the sake of economy.

A vigorous campaign against overcrowding and unsanitary conditions was undertaken by the Department of Health in 1910, with the result that hundreds of houses were condemned, and many owners were compelled to instal much needed sanitary improvements. The most undesirable conditions referred to only tend to promote immorality and disease, and constitute a menace to the community, which cannot be too strongly censured. Since the need for housing accommodation has become acute, the excellent efforts of the Department of Health, in this direction, have had to be greatly lessened, but it is hoped that they will be resumed again shortly."*

The striking feature of this statement is the disclosure of the extent to which, owing to the absence of a constructive policy and the dependence merely on restrictive measures, home life has been sacrificed in a city which has always prided itself on being a city of homes. The term "home" appears strangely out of place when applied to dwellings used for the shelter of two or more families. If the fourteen districts investigated were really representative, and the percentage of houses occupied by single families throughout the city is only 36 per cent. of the total number of houses built to accommodate single families—an almost incredible inference—no further comment is needed on the inadequacy of the present housing policy, or lack of policy. It seems hardly just to single out foreigners for special mention. The "foreigners" lived as they were permitted to live, and, indeed, as they were compelled to live, in common with many thousands of citizens born in Canada and Great Britain. The influenza epidemic revealed to many people previously ignorant of the actual situation the fact that in many parts of the city families, which had been accustomed to better conditions, were being compelled by economic necessity and the failure of private enterprise to provide adequate accommodation, to live in rear hovels opening upon lanes, or to "herd together" in houses, once respectable homes of single families.

The Medical Officer of Health for Toronto has been obliged to wink at abuses. As one of the members of the Toronto Housing Commission, he admits that, "there were no less than 1,538 dilapidated houses, that is, houses unfit for habitation included in the 13,574 buildings visited," and that "condemnation of unsanitary houses, which was active prior to the war, has been practically suspended during the past few years."†

However undesirable it is that families should live in dilapidated and insanitary houses, it is not surprising that the city authorities should permit them to do so when the alternative is living in the streets.

Toronto is the only municipality in the Province which has investigated housing conditions and made a report. Information received would indicate that several other cities and towns have developed a housing problem as serious in proportion to the population as that of Toronto. The fact that reports have not been prepared, and that the situation is not even admitted by some municipal authorities, does not necessarily indicate that the evils of bad housing have been avoided. As late as August, 1918, the City Council in Toronto doubted the need of additional houses, in spite of the opinion previously expressed by the Board of Health that "Toronto should have between 5,000 and 10,000 of these low-priced houses to meet present demands, and 5,000 a year for the next three years at least."‡

* Report of the Toronto Housing Commission, December, 1918, pp. 4, 5.
† Report of the Toronto Housing Commission, December, 1918, p. 3.
‡ Report No. 7 of the Local Board of Health, p. 3.

The influenza epidemic and the perplexities of returning soldiers were needed to stir public sympathy and inform public opinion as to conditions which had developed almost unnoticed by those who were not directly suffering from them.

Under war conditions, then, private enterprise has failed to provide adequate shelter for the people, and public authorities have been unable to enforce necessary sanitary regulations. One other effect of the shortage should also be mentioned. The owners of houses for rent, taking advantage of the law of supply and demand, have been able to obtain rentals which in many cases were out of proportion to the ability of the tenant to pay. The following case in point has been recorded by the Rev. Peter Bryce:

> J. is an unskilled workman. He is a plodding man, without initiative and with very few interests apart from his home. At the age of thirteen he was obliged for family reasons to leave school and undertake employment yielding the highest immediate return in wages. He married early and has had six children, one of whom died two years ago. The children are all under thirteen years of age.
>
> In 1913 his weekly wage averaged thirteen dollars; to-day he earns eighteen dollars. All he receives he turns over to his wife, with the exception of twenty-five cents for tobacco and fifty cents for carfare. He has not had a holiday in six years, and he has consistently denied himself anything but the most necessary clothing in order that the children might be decently clothed.
>
> They have lived in a rented house for several years, paying a rental of $15 a month. It is not a good house, but they were reconciled to it, as their means would not permit them to rent a better one. However, two months ago (September, 1918) the owner notified them that he proposed to improve the property and sell it, and they must leave in one month.
>
> They decided they might pay $18 monthly in rent, but to secure a house large enough for a family of seven at that rental was found to be impossible. Opportunities to buy were afforded, but they had no money for the initial payment. In desperation, on the last day of the month's notice, an extension of time being refused, they rented a house at $30 per month.
>
> They now pay 40 per cent. of their income for rent. On 60 per cent. of their weekly income of $18 a family of seven must be maintained in food and clothing, in addition to all the incidentals associated with the home. It is an impossible task.

The proportion of a man's wages which should be assigned to rental is usually estimated at about twenty per cent. as a maximum. Here we have a man compelled to pay double the proper percentage. The inevitable consequence is serious privation of other necessities of life.

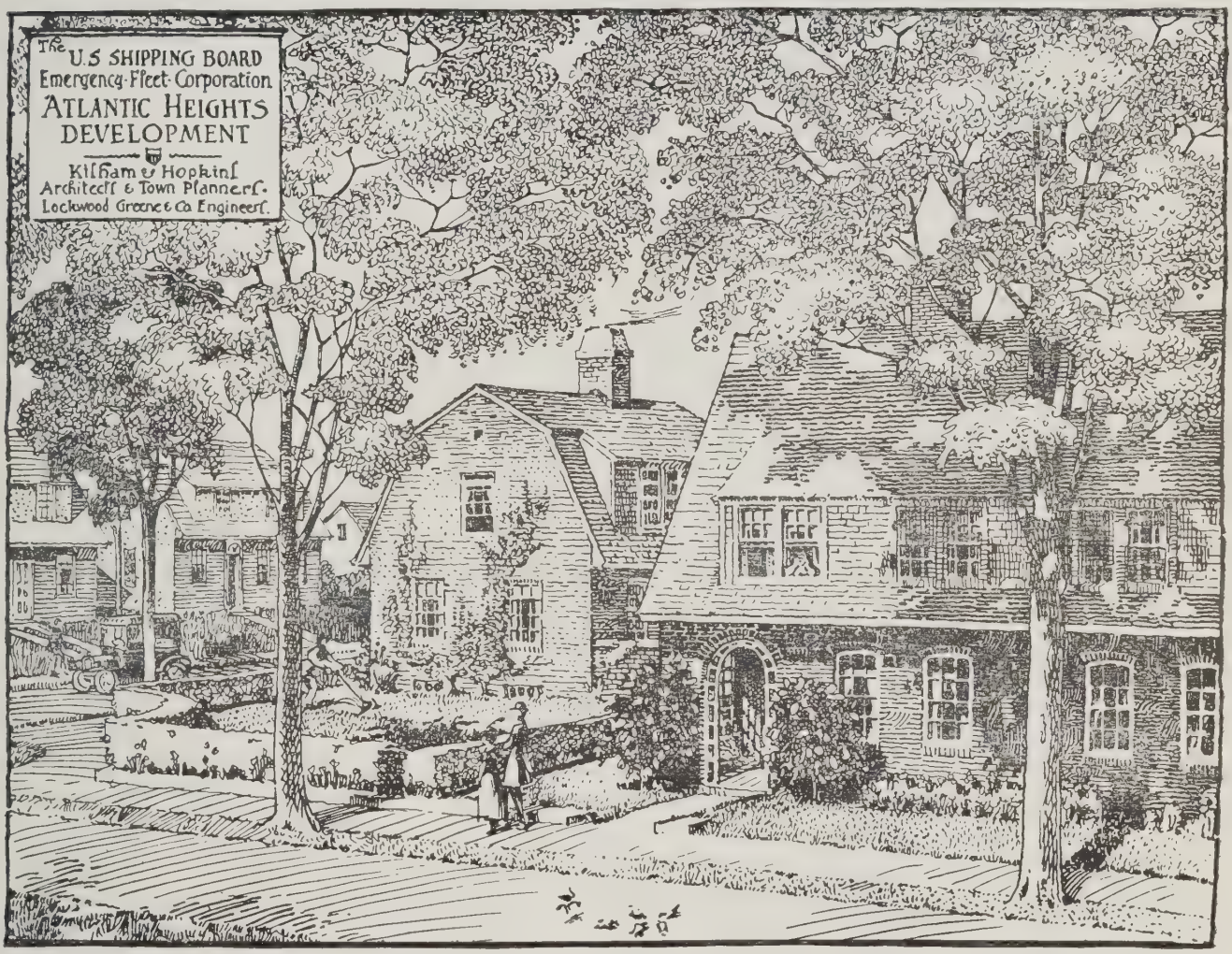
It appears possible, then, to establish a clear case for state intervention when the failure of private enterprise endangers public health and denies decent comfort to the families of citizens.

> "But while we recognize," says Mr. Thomas Adams, "that real improvement is only practicable along those lines that are economically sound, is it not true that the poorest and meanest of our citizens have a claim for decent and sanitary shelter, which we have no right to withhold from them because of misfortune or inefficiency? And even if we could justify neglect

of the conditions in which they live on the ground that they are responsible for them, yet we cannot justify any neglect of the conditions in which their children—the future citizens of the country—are being reared."*

The Government of the Province of Ontario was the first public authority in Canada to move in the matter. On July 17th, 1918, the Prime Minister, Sir William Hearst, wrote to the Chairman of the Ontario Housing Committee, announcing the provision of a loan of two million dollars and discussed the question in the following terms:

"The more investigation I make and the more consideration I give to the housing problem, the more important it appears to me, and the greater appears the necessity for immediate action.



By courtesy of Messrs. Kilham & Hopkins.

United States War Housing at Atlantic Heights, N.H.

In so far as the present situation has been brought about by the war, it might be considered a war problem, and that its solution, along with other war problems rested with the Federal Government. It has also been argued with much force that so far as it is not a war problem, it is largely, if not entirely, an industrial and national one, and that so far as public credit might be required to meet the situation, the responsibility rested with the Dominion Government. The force of this contention is strengthened by the position the Minister of Finance has been called upon to take in controlling the bond flotations of Provincial Governments and municipalities.

* State, City and Town Planning. An address before the Cleveland Chamber of Commerce, June 6, 1916, p. 17.

I pointed out when the Committee, of which you are head, was formed, apart from whatever responsibility may rest upon the Federal Government, in my opinion the matter is largely a municipal one. The problem, however, is a most urgent one, and no time should be lost in a discussion as to where the primary responsibility rests. There should, in my opinion, be both co-operation and action by all parties concerned. . . . . .

I want it clearly understood that the plan I have suggested is only intended as a temporary one to assist in meeting the pressing emergency with which we are confronted, and must not be considered as an admission of responsibility on the part of the Province, or in any way relieving the Federal Government, municipalities, employers of labour, and citizens generally from whatever obligations may rest upon them to provide a satisfactory solution of the whole question. The object of the Government is to lend some assistance, regardless of where responsibility rests, with the hope of stimulating effort on the part of all parties concerned."

It soon became evident to the Ontario Housing Committee that the acute shortage of houses existing in many parts of the Province, which was largely the result of the war, required the assistance of the Federal authorities. The case was thus stated in representations made to the Federal authorities by the Committee:

The Ontario Housing Committee in June of the present year was commissioned by the Ontario Government to investigate the housing situation, and to make such recommendations as it might deem proper.

After three months of study the Housing Committee has arrived at the conclusion that the problem as it affects Ontario can be solved only by co-operation with the Federal authorities. The need is chiefly for inexpensive houses for urban and rural labour. The war and federal action resulting from the war, is mainly responsible for the diversion of private capital from the building of inexpensive houses. National savings have been largely invested in war bonds, so that money has not been available for six per cent. housing enterprises, as provided for under the Ontario Housing Accommodation Act of 1913. The speculative builder also has been drawn into more remunerative and safer lines of investment, being frightened by the high cost of materials and labour, and the fear that the end of the war might leave him with property on his hands which would decline in value. It has always been difficult to get capital for the building of houses of a less expensive type. This difficulty has been greatly increased during the war. The shortage of sanitary and comfortable small houses in which a thrifty workman can afford to live and bring up his family is general, and in some urban centres, serious. In many places it has become practically impossible to rent such houses at reasonable rates, and difficult even to purchase them at the present enhanced prices. Probably two per cent. of workmen's houses cease to be habitable every year. During the four years of war little building has been undertaken. The total number of available houses would be at least five per cent. less than in 1914. Yet in Winnipeg in the years 1915. 1916, 1917, there were 7,798 marriages and only 135 new dwellings and apartments were built. In Toronto in 1916 and 1917, the number of marriages was 10,945, while only 1,551 new dwellings were erected. Unusual building activity is imperative, if the houses which have become uninhabitable during the war are to be replaced, and, to say nothing of immigration, if homes are to be provided for new families which have come into existence. Owing to the

diversion of private capital to finance the war it has become necessary for the State to intervene.

Under present conditions the builder cannot be expected to build for rental, and the workman should not be asked to buy. A conservative estimate of the increase in cost of a workman's house over pre-war prices would be from $500 to $800. No workman should be compelled to undertake such a burden. Its weight can be appreciated when it is remembered what a large proportion of the average savings of a whole lifetime such a sum would mean. It is not fair to saddle the workman, who must have shelter and who should have a decent home, with this loss. In England the Government has agreed to stand 75 per cent., or more if necessary, of the loss ascertained after a period of years. Similar action would appear necessary in Canada. For houses are not like clothes. When a purchaser pays a double price for a suit of clothes, he may comfort himself with the reflection that the investment is one of many, and next year's suit may be well within his means. But a well-built house is an investment for a lifetime, and the burden once assumed is a burden to be borne while the house lasts.

The housing problem is partly one of the shifting of industrial population. In the period of reconstruction the Federal Government being concerned with industry, trade and commerce, with immigration and colonization, to a very large extent will determine where new houses will be needed. It can hardly be considered a wise policy for the future to stimulate either land settlement or industrial expansion without concern for the welfare of those whose contribution to reconstruction will largely depend on the character of their homes.

The return of our soldiers from the war will cause a demand for many thousands of houses. Our investigations indicate that these houses are not available. In many cases the returned man will be so maimed or so shattered in health that he will be unable to earn high wages. Yet he will wish, and should be encouraged, to depend on himself. Small yet comfortable houses conveniently situated in relation to his place of work should be available at prices which eliminate speculative profits. Such houses have never been built in sufficient numbers, and the practical cessation of building during the war has caused a shortage which is even now being felt by our returned men, and which on demobilization, in default of Government action, is sure to become acute and to cause widespread suffering and discontent.

During the past fifty years there has been a growing recognition of the final responsibility of the State for the housing of its people. This idea has found definite acceptance in all progressive countries as a result of the conditions produced by the present war. Great Britain has built for her war-workers many thousands of permanent houses, for the most part in beautifully planned garden cities, and is preparing to assist in the construction of 300,000 houses immediately on the declaration of peace. Even with the war in progress France is actually cleaning out the slums in some of her cities and replacing them by good houses. The United States has voted $175,000,000 to be spent on war housing and has definitely and in a very practical way admitted State responsibility. Everywhere the principle is being accepted that the State which demands large services of its citizens owes in return to these citizens and their families the assurance that they will not lack decent shelter and an opportunity to enjoy home life.

For these reasons, and recognizing that the Provinces and the municipalities require the co-operation of the Dominion to finance and direct a housing policy which will bring Canada into line with other progressive countries, enable us to attract the better type of immigrants, permit us to retain such immigrants and our own more ambitious workmen, and make the homes of Canada fit places for the production of a vigorous, intelligent and contented people, the Ontario Housing Committee respectfully recommends . . . . .

An appropriation of $25,000,000 for housing was announced by the Federal Government on December the third. Coming, as it did, when already German resistance was being broken down, and victory and peace were at hand, the appropriation was a recognition, not of the value of good housing in increasing

By courtesy of Mr. Thomas Adams.

British War Housing, Well Hall, Woolwich. One of the finest developments in England, completed in some nine months.

war production, but of the need of State assistance to remedy housing conditions which had developed during the war. The principle adopted in the distribution of the fund was that the Provincial Governments should have the opportunity of sharing in proportion to their population. These in turn would hand over the money to municipalities. The municipalities could either build themselves or loan to housing companies with limited dividends, or to individual lot owners or to farmers. The municipal authorities in the case of all loans would be responsible to the Provincial authorities and these in turn to the Federal authorities.

A difficulty which arose in connection with war housing in the United States was thus avoided. The large appropriations made by the U. S. Government, amounting in all to some $175,000,000, were expended directly by the Federal

Government through the Emergency Fleet Corporation, and the United States Housing Corporation. The State and municipal authorities had no part in the transaction. Land was purchased or expropriated as desired, and building was pushed with all possible speed, decision as to a post-bellum policy being deferred. Partly as a result of this precipitate action, which was regarded as justified by the emergency, the conclusion of the war has brought about a peculiar situation. While the Emergency Fleet Corporation had several large schemes completed and is proceeding with those not yet completed, the United States Housing Corporation had not a single house finished at the signing of the armistice, and a Bill has passed the Senate to the effect that building operations shall cease except in those schemes which are seventy-five per cent. completed. The absence of financial interest or responsibility on the part of the municipal or State authorities leaves these partly finished developments in the position of friendless orphans.

In time of war a procedure may be justified which under normal conditions would be indefensible. As a permanent policy it would appear wise for the Government to work through the local authorities, a possible exception being the provision of houses for the Government's own employees. Local interest, which is essential to the permanent success of any scheme, is largely dependent on the development of local initiative and enterprise.

Growing recognition of this fact is to be seen in later housing legislation of New Zealand. With the wages and standard of living high, and with a virile and ambitious class of workmen, it was natural that the beginnings of constructive housing legislation should take the form of Government aid to the individual workman. The earlier legislation was intended to aid owners of small holdings in building homes on their land. It is embodied in the Acts of 1906 and 1913, and institutes through the State Advances Office a system of loans to persons with not more than $1,000 income, employed at manual or clerical work. The sum advanced is not to exceed $2,250, or the value of the house to be built, is to be repaid in a period of 36 years, or less, and bears interest at 5 per cent., reduced to 4½ per cent. for prompt payment. The procedure is extremely simple, and takes the form of an informal chat through the wicket with the local postmaster, who supplies the forms, gives all required information, with plans and estimates for eighteen selected types of houses, and receives the periodical payments. The average freehold advance has been $2,290, the average leasehold $1,385, and the average combined freehold and leasehold advance has been $3,250.

There have been two enactments for the benefit of the worker owning no land. These are the Workers' Dwelling Acts of 1905 and 1910. Somewhat interesting features differentiate these measures. The Act of 1905 provided for the erection of houses whose cost was not to exceed $1,500, on Crown or settlement lands set apart for the purpose. With the adoption of the principle of five acre lots this maximum was raised to $3,750. The houses were to be leased for 21 years, with right of renewal, at a weekly or monthly rental amounting to 6 per cent. plus rates and insurance. In all, 126 dwellings were built under this Act.

The Act of 1910 encouraged freehold tenure. A term of 25½ years, increased in the case of brick or concrete houses to 36½ years was allowed for payment in weekly, fortnightly or monthly instalments, these being calculated at 7 per cent., 5 per cent. for interest and 2 per cent. for principal. The initial deposit was to be $50, and at any time the term could be reduced by the payment of $35 or any multiple thereof. All the houses built under this Act, about 600 up to 1917, were purchased.

These measures all provide for direct Government aid and administration. The Act of 1915, however, foreshadows a change of policy, in that it contains a provision whereby the management and control of any workers' dwellings erected by the State can be placed under the control of a local body.

In Canada, Provincial Governments, representing as they do, the municipalities collectively, should have an important place both in determining policies and in administration. Responsibility is shared by the Federal authorities in the case of the present Federal appropriation. The function of the Government, or Governments, however, should be confined to facilitating the financing of house construction for those who otherwise might be unable to secure adequate shelter; to defining acceptable standards; and to maintaining an advisory and administrative body which will assist municipalities and see that funds are expended in accordance with the standards as defined.

It would appear unwise for the Government ordinarily to advance money at less than the current lowest rate of interest. There are, however, occasions when the Government may wisely accept a share of the responsibility for the cost of houses required for decent living conditions. For instance, the present war has produced an inflation of cost which in the case of low-priced houses seriously retards necessary building. The responsibility for this extra cost should, it is believed, be shared by the Government. The Government of Great Britain in the acceptance of this principle has made a generous provision to meet such inflated costs. It has agreed to make good seventy-five per cent. of the difference between the cost of construction under war conditions and the cost under normal conditions, which it is assumed may be reached after a period of seven years. The difficulties of estimating and capitalizing this difference are formidable enough. In Ontario by loaning eighty-five, or in some cases one hundred, per cent. of the cost at five per cent., rather than sixty-six per cent. at current rates, together with a contribution of three-quarters of the estimated excessive cost, as in Great Britain, a simpler method of meeting the situation has been devised, and one better suited to Canadian conditions.

In justifying direct State aid it may be argued that a responsibility attaches to the provision of low priced houses. In the case of income and succession taxes ability to pay as indicated either by income or estate is not proportionately taxed; the State shares increasingly in the ability to pay. It may be contended that if the State is responsible for supra-normal income, on the same principle it would be responsible for sub-normal income. Consequently, if to loan money by the State at an uneconomic rate of interest in order that its citizens may be properly housed is considered in every case an unwise or unjustifiable proceeding, it may become necessary for the State to put in operation measures which will secure for workmen a wage which without State assistance will attain the same object. The point upon which the issue hangs is whether the State is prepared to deny a responsibility for making decent living conditions possible for all its citizens.

State subvention to housing, then, in the form of loans at an uneconomic rate of interest, in certain special circumstances may be not merely defensible but imperative in the public interest. It is remedial, however, and should not divert attention from the devising of fundamental policies. Unless exceptional, it would have the effect of checking private enterprise. Capital which otherwise might be directed to housing would naturally be diverted to other more profitable channels. The effect of Government intervention thus might be actually to reduce the amount of building. Unless the State is prepared to take over the whole business

of providing houses for its citizens, or for any particular class of its citizens, it cannot wisely adopt a permanent policy which discourages legitimate private enterprise.

England has had a longer experience and has made more progress in housing legislation than any other country. The pioneer in the modern movement for housing reform was Lord Shaftesbury, who introduced his Labouring Classes Lodging Houses Act in 1851, providing for loans to municipalities, and later, to building societies. The history of the relation between public and private enterprise in England is thus summed up by Mrs. Edith Elmer Wood: "Municipal activity has tended to keep up standards and that of private associations to keep down cost. Each is put on its mettle to prove its own claim to superiority. Far from stifling private initiative, the effect of Government intervention appears to be stimulating. At all events, the greatest private activity has occurred in those localities where public officials have done most."*

The method by which private enterprise can best be encouraged has yet to be worked out even in England. The committee appointed by the Local Government Board under the chairmanship of Sir Tudor Walters has recently reported urging the use of all agencies, public, semi-public, and private: "If a bold and enlightened policy is pursued, by which all the housing agencies, including local authorities, public utility societies and the best forms of private enterprise have their due and fitting place under the supreme direction of a well-organized and efficient central department, we may have in the future instead of gloomy streets and squalid dwellings, spacious suburbs with convenient and attractive houses, designed by competent architects, with districts planned so as to provide the amenities of healthy social communities."†

The Ontario plan as contained in the circular issued on December 12th, 1918, provides for aid to private enterprise in that loans are granted to individuals owning building lots, to farmers, and also to housing companies with limited dividends. The Committee has sought to determine the feasibility of Government loans to building companies other than those restricted as to dividends. The difficulties of administration are very great and no precedent exists for guidance. It is just possible that the urgency of the need may call for pioneer measures. If so, loans might be granted under such regulations as are enumerated and discussed in Appendix IV.

If, then, the normal function of the Government is one of providing loans and securing standards, what part should the municipality play? In Germany housing reform had its beginning in the municipalities. Ulm was the first German city to undertake a housing scheme, first for the employees of the municipality, then for other workmen. This was in 1888, thirty-seven years after Lord Shaftesbury's Act. The movement has spread rapidly throughout the various States, being facilitated by the fact that a great deal of land in Germany is owned by the municipalities themselves. "The City of Frankfort owns 12,800 acres within the corporation—over half—and 3,800 acres outside; Berlin owns 39,000 acres; Munich, 13,600. Mannheim owns over half the land within the city limits. A few years ago Ulm owned three-fifths of its land; now it owns four-fifths."§

One of the most interesting examples of housing undertaken by a city is to be found in South Africa. In Bloemfontein a plan has been developed, certain

* The Housing Problem in War and in Peace, 1918, p. 71.

† Report of the Committee....to consider Questions of Building Construction.... for the Working Classes in England, Wales and Scotland, 1918, p. 7.

§ Dr. J. O. Miller, "The New Era in Canada, 1917, p. 377.

features of which may be thought to be practicable for Ontario. In the past seven years this city with a population of between ten and twenty thousand has advanced $800,000 for housing, nearly $300,000 of which has already been paid back. There have been no bad debts and no defaulting in payment of interest. The ground is provided by the purchaser. The total amount of the building is provided by the municipal council. The interest rate is 7 per cent. until the loan is brought down to half the valuation after which it becomes 6 per cent. The difference of 1 per cent. has been treated as a reserve against possible bad debts.

The council usually requires collateral security for about a third of the loan. The collateral is notified in case payments are not promptly met. Such security is not absolutely insisted on, but is regarded as a safeguard and stimulus to the meeting of obligations on the part of the purchaser. The payments of interest and principal are made monthly. This, as a rule, is paid by the wife as a part of her household expenses. Great pleasure is taken in meeting the amount due, and in adding any further sum which can be saved. The council has not hesitated to encourage such enterprise, because it realizes that every house so built adds to the tax receipts and provides another water and light consumer and another tram rider. It has taken measures to ensure that good houses are built by providing that a qualified architect shall be employed to supervise the work and that the contractor and the specifications shall be approved by the city engineer.

The famous garden city of Letchworth may also be considered a municipal venture. It came into being with the incorporation in 1903 of an association known as the First Garden City Company, Limited. This association retains the freehold of the town, which comprises about 4,500 acres and has made provision for a population of 30,000. The development was entirely new, and was not imposed on any existing municipality. It differs from other new developments in this respect, that it was not founded by an industry or an association of industries for commercial advantage, but originated in the bold idealism which contended that where men are well housed, where town and country are united, industries will be eager to locate in order to secure workmen thus housed and environed. Accordingly a model garden city was laid out, permanent houses were built for industrial employees, farm labourers and others who might minister to the social needs of a self-contained community—and the industries came. In spite of initial difficulties incidental to a pioneer venture, the city has grown until it is now one of the largest towns in the County of Hertford and has a population of 12,000. The general soundness of the idea is further reflected in the fact that Letchworth experienced none of the labour unrest prevalent during the war. The garden city has also shown itself a good place in which to rear children. The infant mortality table for England and Wales in 1917 is significant:

England and Wales	97	per	1,000	births
96 great towns	104	"	"	"
148 smaller towns	93	"	"	"
Rural districts	76	"	"	"
Letchworth	36	"	"	"

Here the Aristotelian doctrine that the function of the city is to provide "the good life" for its citizens was applied to modern industrial conditions. English idealism is usually saved by an infusion of practical common sense. Letchworth has survived and prospered.

Municipal housing as a direct enterprise has not been attempted in Canada. Industries have been bonused by ambitious towns, which have sometimes gone

to absurd lengths in bidding against one another for such industries, but the provision of houses for the workers in these industries has been left to private initiative. The houses will come to the factories, we have argued, rather than the converse, as the dreamers of Letchworth believed. Under the terms of the Federal appropriation * and under the Provincial provisions is is possible for municipal councils to engage in building. They can borrow to the full extent of the cost of their houses. An added incentive is the fact that a great many cities are finding themselves in the possession of land which has come to them through the collapse of real estate speculation. Apart from the supposed inefficiency and extravagance of public bodies in carrying out such undertakings, there is nothing to deter municipalities from building.

Whether or not the municipality ventures to invest its own revenue in housing, it has at any rate an important work to perform. It is responsible for the laying out of the streets, for the provision of other services, and for the proper supervision of construction. Under the Ontario plan it acts also as a responsible intermediary between the Government and the housing company or individual builder. It is sound policy to place some responsibility on the municipality. Local authorities are in a better position than the Government to estimate the need and decide on the claims of any applicant for a loan, and local sympathy and support contribute to the permanent success of any building scheme. This additional advantage accrues that the assumption of such responsibilities, which affect intimately the well-being of the community, tends to attract to service in municipal councils men who are repelled by the prospect of dealing with the petty details which often monopolize the attention of our local authorities.

Municipal expenditure on housing may become a necessity where slums have been permitted to develop. The penalty for neglect adequately to control the construction, use, repair and demolition of buildings must be borne by the municipality. At the present time the first three of these duties have been generally recognized and in a measure assumed, but greater thoroughness in control and supervision is essential if the growth of slums is not to be perpetuated. There comes a time for each house when the cost of repair is uneconomic in comparison with the returns. It is then necessary to destroy the building. The recommendation of the Medical Officer of Health of Toronto which is quoted with approval by the Bureau of Municipal Research is sound and in accordance with enlightened opinion: "Where the Medical Officer of Health of any municipality has condemned any premises within his jurisdiction as being unfit for human habitation, he shall serve a notice on the owner requiring him to alter, improve or destroy such building within a specified time, and in the event of such notice not being complied with, the Medical Officer of Health may enter upon such premises and perform such work as may be necessary to comply with his requirements, and the cost of such work may be recovered as provided for in Sec. 25 of the Act."† (i.e., by a legal process or by charging it against the taxes of the owner.)

The demolition of the building when its usefulness is past, should be paid for by the owner, just as its repair while it is still in use, or its construction at the outset. Municipal neglect to enforce regulations may result, however, in the creation of vested interest in these abuses, and this would involve the municipality.

* See Appendix I.

† Report of Bureau of Municipal Research, December, 1918, p. 35.

By courtesy of Mr. Thomas Adams.

British Company Housing, Bournville.

By courtesy of Mr. Thomas Adams.

British Company Housing, Port Sunlight.

as a partner in the abuse, in a measure of responsibility for the cost of its remedy. On this ground municipal expenditure on re-housing schemes may be defended, but the expenditure is more properly directed to preventing slum conditions by wise city planning and thorough enforcement of regulations.

Whether constructive or reconstructive housing is required, the municipality is mainly responsible for the institution and direction of the scheme, and it is always better that such improvements should be developed by the community immediately affected, than that they should be imposed from outside.

Building on the part of companies for their employees is sometimes advocated as the best solution of the housing problem. A good deal has been accomplished in recent years both in England and in America through employers' enterprises. From data gathered in 1916 Mr. Leifur Magnusson gives a thousand as a conservative estimate of the number of such housing schemes in the United States.*

They owe their origin to the recognition by employers that housing conditions very directly affect both the amount of work accomplished and the length of time men are prepared to stay with a job. No man who lives in a dilapidated or insanitary house, or who has a daily journey of an hour on crowded cars to and from his work, can be expected to compete with the workman who can walk to his work in fifteen minutes from a comfortable and convenient house which he is proud to call his home. In all branches of industry which employ skilled workmen a serious loss is experienced in the changing of hands. The manager of the Dominion Steel Products Company estimates the cost of breaking in a new employee in the works of his company at from $20 to $300. These considerations, quite apart from the fact that the provision of houses serves as a good advertisement, keeping the company favourably before the public, are inducing an increasing number of companies to engage in industrial housing as a legitimate operation of their business.

One of the earliest of these schemes was that of Lord Leverhulme, at Port Sunlight. In 1887 he purchased fifty-six acres outside of Birkenhead, near Liverpool, and built up a model village for his employees. The success of the scheme has been so pronounced that the development has been steadily extended. The firm, however, has adhered in the main to its original policies. The houses are rented to employees only. Since the work is considered to be a form of "prosperity sharing" with the employees, the rentals do not include a charge for interest on the capital expended, but are based only on the cost of maintenance and the provision of a sinking fund. Lord Leverhulme is reported as having stated that the largest return paid on any money his company has invested is that on the money expended in housing, for which they got no direct financial return.† The workman of independent spirit, however, may prefer to share in profits through wages or in a manner of his own choosing.

A serious problem confronting the old land was the housing of the thousands of workmen whose coming transformed staid old villages like Woolwich, or romantic hamlets like Gretna Green, into clanging cities overnight.

The example of Well Hall, the town built by the British Government to house the munition workers at Woolwich Arsenal, is a characteristic one. Here, in the almost incredibly short time of nine months, a complete town was built

* Proceedings of the National Housing Association, 1917, p. 107.

† Proceedings of the National Housing Association, 1916, p. 278.

to accommodate 6,000 workers, in houses comprising two to four rooms. When one considers that this involved the building of streets, and installation of all public services, as well as the erection of 1,600 houses at a time of unprecedented railway congestion and labour scarcity, the magnitude of the task becomes more apparent. But there are the added facts that the buildings were made permanent and that generous provision was made for social needs by the erection of churches, cinema palaces and halls and by the setting apart of open areas. The houses are rented at a weekly rate varying from 7s. to 15s. 6d.

Gretna Green where the ancient matrimonial blacksmith has been succeeded by thousands of war workers, follows very similar lines. An illuminating feature of the housing enterprise here was the speedy abandonment of the experiment of erecting temporary buildings. Both these developments have been carried out and administered directly by the State.

Rosyth on the Firth of Forth, built for the Admiralty workers on the type of the Garden City, shows a variation from Well Hall and Gretna in being erected by a housing company, promoted, however, by the Local Government Board of Scotland.

The American method of solving a similar housing problem is chiefly interesting as illustrating the American Government's reluctance to become a landlord, whereas the British Administration shows no apparent hesitation in assuming the role. A case in point is that of Yorkship Village, built by the Emergency Fleet Corporation,* a Government body, for employees of the New York Shipbuilding Company at Camden, N.J. The bulk of the money for the building of these houses is lent by the Government to the New York Shipbuilding Company, with provision for the transfer of the enterprise to the Fairview Realty Company, a corporation subsidiary to the Shipbuilding Company.

The Government charges 5 per cent. interest and requires repayment of 3 per cent. of the principal annually. Provision is made for selling houses, but there is no arrangement for continuing the Government loan as a mortgage on such houses. Private capital must finance these purchased houses. A limited dividend of 5 per cent. cumulative is forever placed on the private capital stock of the company, although no hindrance appears to be placed in the way of the Realty Company selling to parties not under similar restrictions. From two to five years after the close of the war, the company, and it is to be assumed, private purchasers, may secure an appraisal of its assets, and the Government will write off from the loan any shrinkage up to 30 per cent.

Two of the most interesting of the thousand or more employers' housing schemes in the United States may be described. The housing enterprise of the Goodyear Tire & Rubber Company at Akron, Ohio, is interesting chiefly as illustrating one of the objections raised to company enterprises, and one of the methods adopted to evade another objection. To avoid the undesirable relationship of landlord and tenant between employer and employee, the company adopted the common device of a subsidiary company, the Goodyear Heights Realty Company which built more than 600 houses for sale to employees. In 1912 when the first houses, 111 in number, were built, the procedure followed was that of allowing the purchaser to move in without any initial cash payment. In cases where the workman had purchased a lot, and had paid $100 on it, the company would finance the construction of his house, if the plan had been submitted and approved.

* An illustration of Atlantic Heights, another development of the Emergency Fleet Corporation, will be found on page 25.

In their later policy, however, a cash payment of 2 per cent. of the purchase price is required. In selling a house, the company now charges what it calls its real estate value, which is the cost of the lot, plus the cost of the house, with an additional 25 per cent. The proposition made to the purchaser is that if he retains the title for five years without transfer and with payments kept up, and if he remains during those five years in the employ of the Goodyear Tire & Rubber Company, then this additional 25 per cent. will be refunded. This provision is open to the objection that it restricts the freedom of the employee.

The development at Indian Hill, Worcester, Mass., an industrial village for the employees of the Norton Company seems to be free from criticism on this score. The system followed is also that of sale. An initial payment is made, and notes at 5 per cent. are given, one for $1,000 payable in 12 years, and a second for the balance of purchase price, payable on demand. Both notes are secured by a "purchase money mortgage." A distinctive feature is that the buyer agree to purchase five shares in a co-operative bank, and to continue payments therein until his deposits shall have matured in the sum of $1,000. This insures payment of the twelve year note. A schedule is given to each purchaser showing the required monthly payments. A typical schedule follows:

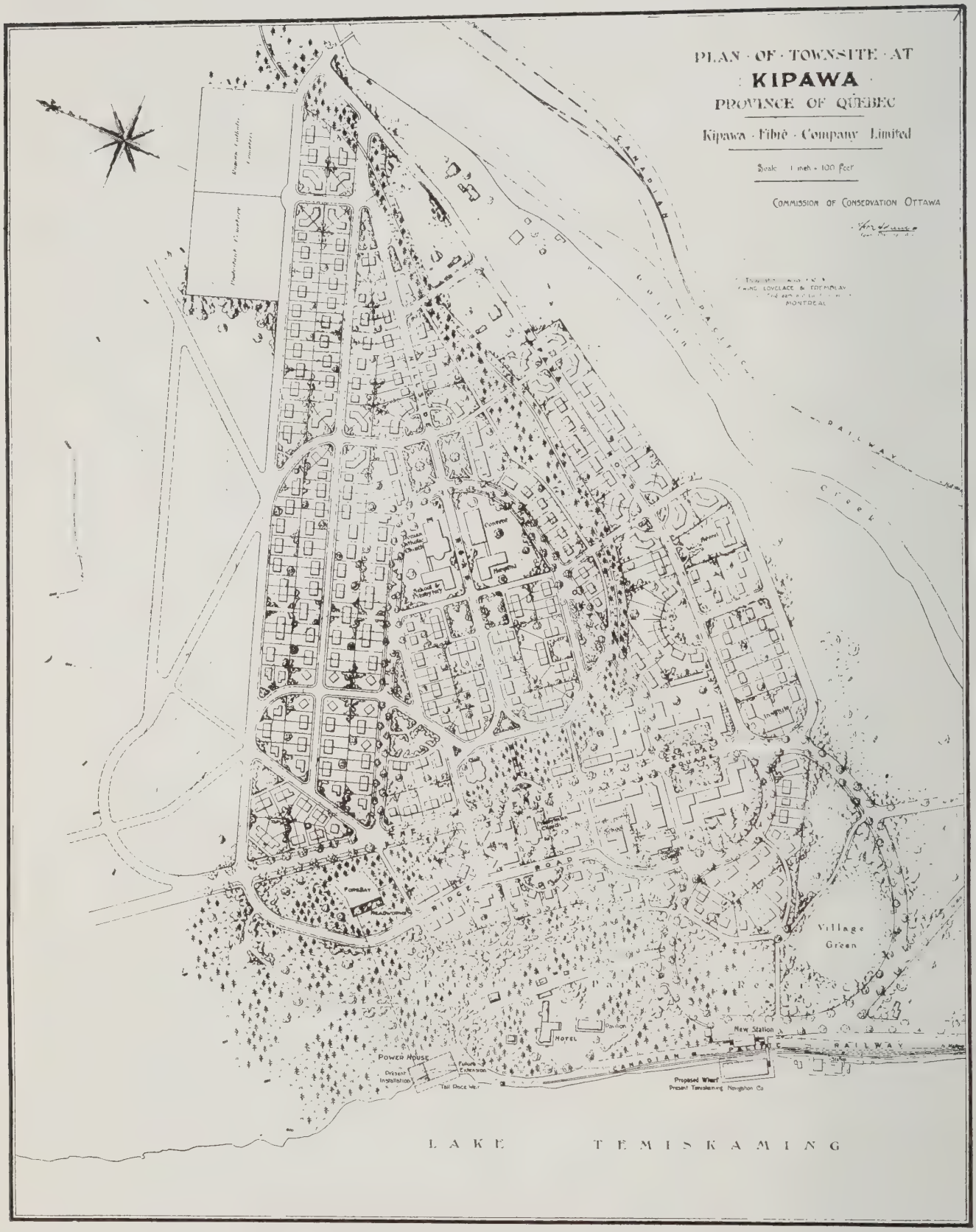
Your total purchase price is	$3,851 50
You have made a first payment of 10%	385 15
You are borrowing on mortgage, the balance	3,466 35
The amount due in 12 years, secured by time note, is	1,000 00
The balance secured by demand note is	2,466 35
Your monthly interest during first 12 years will be	14 45
Your monthly payment to co-operative bank will be	5 00
Your total monthly payments during first 12 years	19 45
Your monthly interest payment after 12 years will be	10 30

Total loan	$3,466 35	Demand loan	2,466 35
Five per cent.	173 32	Five per cent.	123 32
1/12	14 45	1/12	10 30

In Canada, housing as an employers' enterprise has not made such rapid progress as in the United States. Some of the recent developments which merit attention are those of the Dominion Steel Products Company at Brantford, and the Kipawa Fibre Company at Kipawa.

The Dominion Steel Products Company is now engaged on an attractively planned garden suburb project at Brantford, which calls for the building of 238 houses. The proposal was to rent these at from $30 to $35 monthly. They were meant for highly paid operatives, and originally were planned to cost about $3,800, including the land, but the actual cost has amounted to about $4,300 each including land. The company is now contemplating a variation from its original policy. It proposes that the houses remaining to be built shall be less expensive, and shall include semi-detached and group houses and not merely individual houses as in the original scheme. An interesting feature of the project is the intention to maintain a definite relation between the current scale of wages and the rental. If wages come down the rents will be lowered proportionately. The company makes a further effort to lessen labour turnover by providing that employees who have been two years or more in its service may purchase the houses at actual cost. A commendable feature is the fact that while all the houses are situated within easy walking distance of the works, the nearest is about a quarter of a mile distant.

The development at Kipawa on the Quebec side of the Ottawa River leaves little to be desired in the matter of planning. An entirely new town for some 5,000 people is to be carved out of the forest. In addition to houses and shops, provision is made for locating churches and schools, theatres and recreation



By courtesy of Mr. Thomas Adams.

Plan of the new industrial town of Kipawa, Quebec.

grounds in the places best suited to each. The streets follow the natural contours and the main arteries converge on the community centre. Only a few houses have yet been built, but rapid progress is planned for the year 1919. Financial arrangements are still in the making.

Such company enterprises are not without disadvantages. Where they are uneconomic, that it where the policy is to charge the employee less in rental or in purchase price than the actual cost to the company, they are to that extent philanthropic in character. The workman of to-day does not want philanthropy; all he asks for is a fair deal. Even where they are free from this objection they are open to criticism in that they are regarded as a means to tie the workman to his employer. This objection is met to a large degree where the houses are rented and not sold. But in this case emphasis is directed to the fact that the men have no stake in the community.

The difficulty felt by workmen that they are bound to the company is largely overcome where a number of companies combine as in Kenosha, Wisconsin. Here, in 1914, the manufacturers formed a joint stock company, the Kenosha Homes Company, with a capital stock of $25,000 paid in, and subscriptions of $400,000, to be loaned at 5 per cent. as required. The company purchased land, subdivided into 200 city lots on which have been built and sold 125 homes. (Arrangements were also made whereby the assistance of the Homes Company could be obtained by owners of lots, who wished to build. Local banks furnish 65 per cent. of total value on a first mortgage, the Homes Company agreeing to supply the remainder on a second mortgage at 6 per cent.) The Homes Company contracted for the construction of its houses with a local firm, the Kenosha House Building Company. As this did not prove a satisfactory arrangement, however, the Homes Company finally purchased the entire interest of the House Building Company and now deal directly with building contractors and purchasers. The Homes Company retains title to the property until the unpaid balance is reduced to 65 per cent. of the purchase price, when purchasers may receive a deed subject to a first mortgage. The prices range from $2,500 to $3,200. The applications, on regular printed blanks, must be approved by the officials of the Homes Company, and are usually made through one man at each factory who represents the company. A minimum cash payment of $100 is required, with a monthly minimum payment of $18.

An interesting situation developed in the soft coal region of Pennsylvania. A model mine town was erected from the ground up by the employing company and about a year or two later was turned over to the community after the inhabitants had voted for its incorporation.* A policy which combines company building and town planning with provision for a transfer from the ownership and control of the company to that of the community, has much to commend it. Especially is this the case if provision is made that any speculative increase shall accrue to the community and therefore to the purchaser.

The latest ideas in company enterprise are illustrated by an English development now in process of completion near Bristol. This is the Kings Weston garden village, built to accommodate the employees of the National Smelting Company. It is situated about a mile from the works, and embodies the most advanced ideas in town planning, and social welfare. A very interesting aspect of this development is to be found in the personnel of the Committee of Management which operates it as a Public Utilities Society, that is, a society with limited dividend. The Committee includes two representatives of the city and industry of Bristol, the organizer of the Dockers' Union, a miller and wharfinger, the landowner, two representatives from the university, and one from the company. Later it is intended to include representatives of the tenants. The policy aimed

* Proceedings of the National Housing Association, 1917, p. 129.

at is the promotion of local control. An enlightening comparison could be made between the personnel of this Committee, with its strong infusion of idealism, and that of any similar body in America.

The ideal system toward which housing policy seems to be moving is that of co-operative construction and control combined with municipal and governmental provision of loans at the lowest current rate of interest.

This system has actually been realized in Great Britain in the operations of such organizations as the Co-partnership Tenants, Limited. Societies registered under the Industrial and Provident Societies Act, 1893, as limiting the annual dividend to 5 per cent. are recognized as Public Utility Societies, and as such are permitted to borrow two-thirds of their capital from the State. A growing number of such societies have been incorporated, and the majority of them conform to the type of the Co-partnership Tenant Societies, in which the profit in excess of five per cent. earned upon the share capital goes to the tenant investor after provision has been made for a property reserve fund. The organization known specifically as the Co-partnership Tenants Limited, is the most important of these societies. It is an outgrowth of the Ealing Tenants, Limited, founded in Ealing, West London, in 1901, and it has become a federation of fifteen societies with a large measure of local control vested in each estate. In addition to administering many important developments, such as the famous "Garden Suburb" of Hampstead, it gives active aid to other organizations with similar aims.

The capital for the organization is raised in four ways:

(1) Capital borrowed from the State through the Public Works Loan Commissioners, who may lend up to two-thirds of the value of a house and land, after the house is built. This costs 3½ per cent. plus sinking fund for loans repayable in forty years.

(2) Loan stock, which is transferable and bears interest preferentially at the rate of 4½ per cent. per annum.

(3) A limited number of loans withdrawable at stated periods by arrangement with the Committee as to the rate of interest and terms of repayment.

(4) Ordinary shares, the dividend upon which is limited to 5 per cent.

It is interesting to note that the Housing Committee of the Federation of British Industries reporting in April, 1918, on Public Utility Societies, recommended that the State should be empowered to increase the advance from two-thirds of the value of the property to 80 per cent.

Through the limited loans and the loan stock, an employer is enabled to assist in housing his employees without any of the undesirable features inseparable from a direct landlord and tenant relationship. The tenant usually is expected to become an investor. The amount invested depends more or less on the size of the house. While the annual report of 1917 shows a few tenant investors of one and two pounds, the amount invested is generally between twenty and two hundred pounds. The broadly democratic basis of the movement is shown in the fact that in Hampstead rentals vary from six shillings a week to two hundred pounds a year, fifty-two per cent. ranging between six and ten shillings a week.*

The first call on the annual profits is for a property reserve fund. This fund takes care of any depreciation due either to decay in structure or to decline in rental value resulting from want of more modern equipment, and serves to guarantee investors against any falling off in productivity. From seven to

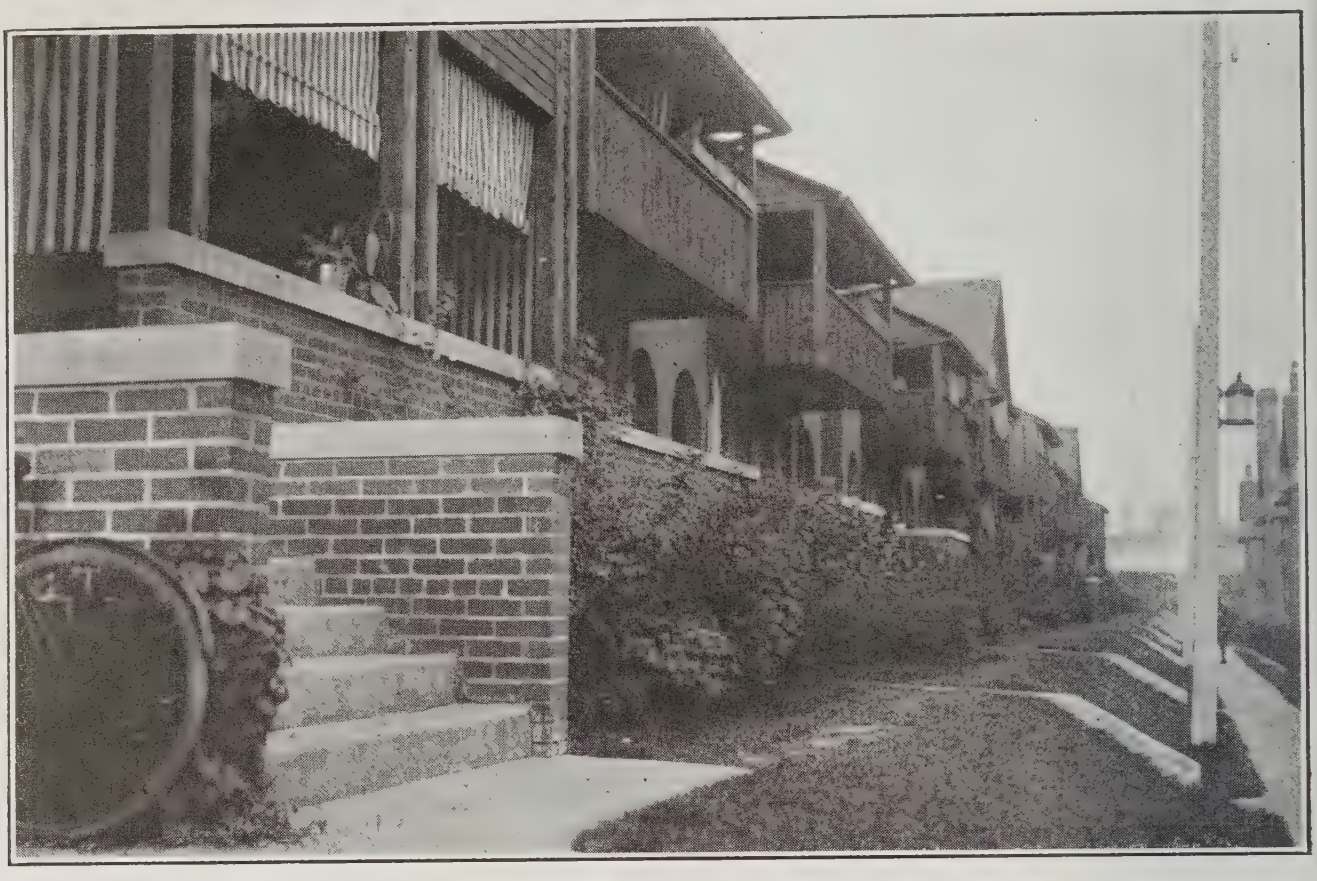
* Transactions of the Liverpool Town Planning and Housing Conference of 1914, p. 164.

ten per cent. is annually set aside for this purpose. Ten per cent. of the residue is transferred to a social and educational fund, ten per cent. goes to the Board of Management, and the remaining eighty per cent. is returned to the tenant investors.

Some idea of the growth of Co-partnership Tenants Limited, may be gathered from the increase in capital. In 1905 the capital invested was £92,000. By 1912 this had been increased to £1,190,000, and in 1917, in spite of the rigorous restrictions on housing during war time, showed a further increase to £1,455,359.

Each tenant has an interest in keeping his home in good repair because he is assured permanency of occupation and he knows that everything he saves contributes to the bonus he will receive at the end of the year. However, if he should wish to leave the community he is free to do so and is permitted to withdraw whatever he has invested. The scheme thus combines the advantages of ownership with those of rental, and harmonizes individual and community interests.

The Ontario policy admits of the use of this co-partnership method. One of the most advanced pieces of housing legislation on the statute books of any country is the Ontario Housing Accommodation Act of 1913. Under this Act, as amended in 1914, if a municipal council of a town or city is satisfied that additional housing accommodation for those living and working in the municipality is urgently needed, the council may guarantee the bonds of a company incorporated under the Ontario Companies Act to the extent of eighty-five per cent. of the value of the land and housing accommodation and improvements, the remaining fifteen per cent. to be provided by the company. The municipality provides no capital but lends its security to 85 per cent. of the undertaking. No loss could be incurred by the municipality unless the entire capital supplied by private investors should first have been lost. The company must have been incorporated mainly for the purpose of acquiring land in or near a city or town in Ontario, and building thereon houses to be rented at moderate rents, or sold at moderate prices; it must satisfy the municipality that its main purpose is to supply a need for additional houses, and not to make profits; it must not declare dividends of more than six per cent. on the capital stock; and the books of the company at all times shall be open to inspection by the municipal council, which may appoint one of the directors. Companies organized under this Act would be known in England as Public Utility Societies. The question has been raised as to whether the Government would not be justified in loaning direct to such companies. The practice in England has been to loan direct. The Birmingham Corporation presented the view before the Housing Committee of the Ministry of Reconstruction that all loans should be made through the Local Authority. The Committee did not entirely approve of the suggestion, but expressed itself as follows: "We do not think this course should be insisted on in all cases. In our opinion a clear distinction should be made between cases where a Public Utility Society receives financial assistance in some form or other from the Local Authority in addition to that which it obtains from the State, and cases where the assistance is limited to that obtained from the State alone. In the former case, generally speaking, the State's assistance might well, with the concurrence of the Central Authority, be made through the medium of the Local Authority. In the latter case the Public Utility Society should have the right to approach the State direct. We presume that in every case the Central Authority would before finally deciding to grant a loan or subsidy, give the Local Authority an opportunity of stating its views; but we regard it as important that it should



By courtesy of Mr. W. S. B. Armstrong.

North Terrace— Toronto Housing Company.

By courtesy of Mr. W. S. B. Armstrong.

The Lindens—Toronto Housing Company—Showing Community Playground.

not be in the power of an unsympathetic Local Authority to delay or obstruct the carrying out of a scheme of a Public Utility Society in its area.'"*

The Act may conveniently be used by companies of manufacturers and others who are interested in assisting their business by providing for the comfortable shelter of their employees. It also appeals to public spirited citizens who are prepared to risk something in order to improve housing conditions in the city. The only company formed up to the present in Ontario has been the Toronto Housing Company. It is responsible for two attractive developments, comprising 242 apartments and eight houses. The outbreak of the war prevented the company from carrying out its plans, and rendered the overhead charges excessive as compared with the returns. A result has been that no dividends have yet been declared by the company. It is greatly to be desired that the building plans of the company including as they do houses both for sale and for rent should be completed as soon as possible.

The Co-partnership Tenants system could be realized under the Ontario Act. In fact, the only difference between such a company and the Toronto Housing Company would be in the personnel of the shareholders and in the application to finance and management of the principle of co-operation. The policy of the company would then be controlled not by public spirited citizens who have invested money on a restricted dividend basis, but by such citizens together with a much larger number of workmen and others who at the same time would be shareholders in the company and occupants of the houses.

* Interim Report on Public Utility Societies, Housing (Financial Assistance) Committee, Ministry of Reconstruction, p. 10.

Chapter III.

LAND AND TAXATION.

It should be possible for every Canadian family to have a convenient house substantially built, with sufficient ground to admit of ample light and air and in most cases to provide a garden plot. Before this can be realized as a Canadian standard of housing a solution of the land problem must be found. Incredible as it may seem in view of the extent of available land and the cheapness of electrical energy, already congestion of population is a real menace to our cities. Twelve houses to the gross acre, the maximum for new urban developments in England, is with us considered as affording a very generous amount of land to each house; and £400 an acre which is there considered about the highest price possible for land ripe for the building of workmen's houses we have come to regard as affording an inadequate return to the land owner.*

The land problem is more easily recognized than defined, and more easily defined than solved. Its solution, however, will depend on the ability of the citizen body to look beneath the symptoms to the underlying causes, and courageously and honestly to apply the necessary remedies.

The inequity of our land system thrusts itself upon the notice of even the most careless observer. It huddles families together in down-town tenements, and defends its action on the ground that "hub value must be maintained"; it conveys long-suffering workmen past vacant fields into suburbs where houses are set on the smallest possible lots; it lays miles of idle water-mains and unfrequented sidewalks leading into space; it builds impressive stone gateways showing a vista of wilderness; it denies spaces for parks, or grants them grudgingly at exorbitant prices; it builds bridges and extends street railways at public expense, diverting the resulting profits to private bank accounts; it makes and unmakes fortunes which consist of nothing more substantial than capitalized optimism.

Thus the land, an essential commodity, is made the instrument of private profit at the expense of the general welfare. Every increase in the price of essential commodities which does not represent an addition to value through service rendered, is an addition to the burden which must be borne by the community. If a citizen who wishes to use a piece of land for his home is compelled to pay to private owners an amount in excess of the agricultural value of the land, plus the cost of development, the community is poorer by that amount. The excess may be due to the added value afforded by proximity to growing industries, or it may be due mainly to the cumulative psychological effect of speculative buying and selling. In either case it represents no individual effort which merits reward. It is not in the interest of the community to encourage an inflation of land values, which inevitably reacts on the cost of labour, and places the community at a disadvantage in competition with other communities where land values are lower.

If the principle is accepted that values for which the community is primarily responsible should be distinguished for purposes of taxation from values for which

* Proceedings of Liverpool Housing and Town Planning Conference, 1914, p. 155.

individual initiative and effort are responsible and that the community may claim what the community creates, it remains to be considered how best this can be accomplished.

The device most frequently urged is that of partial or total exemption of improvements with a resultant increase in the taxation of land values. The argument used in support of this proposal is that the removal of the tax on improvements tends to encourage industry and good building, and at the same time the increase in the tax on land penalizes the holding of land out of use for profit. In so far at it does this without countervailing disadvantages it should be accepted as sound and wise. The main disadvantages appear to be (1) the disregard of the principle that taxes should be levied in accordance with ability to pay, so that the owner of a property with a building four storeys high would be taxed as heavily as the owner

By courtesy of Mr. Thomas Adams.

British War Housing, Shirehampton (a suburb of Bristol).

of a twenty-storey building on an opposite corner, and (2) the incentive given to the building of the largest possible buildings on the least possible land, with the result that air monopoly is substituted for land monopoly.

The confining of taxation to land as distinguished from buildings in any case fails to be equitable or to improve living conditions, unless it is accompanied by regulations limiting the height of buildings and the proportion of the lot to be covered by buildings of various types in different parts of a city. Regulations not more difficult of application, even with a system under which improvements are taxed might serve to prevent the holding of land in idleness or virtual idleness, such as the provision that land shall not be subdivided until it is ripe for building and the provision that dilapidated or insanitary buildings shall not be occupied, but shall either be brought up to standard or destroyed at the expense of the owner.

In fact, the primary purpose of taxation is not the discouragement of idleness or the encouragement of industry. If it were, the adding to the size of one's garden and the setting out of rose-beds might be regarded as conferring virtue and immunity from added taxes, quite as much as the building of a sun-room or the application of a fresh coat of paint. Taxes are raised primarily to meet community needs. When too heavy burdens are placed on idle or partly used land the difficulty is that the tax tends to impair the value of the property. This has been happening to a very considerable extent in Western Canada. Many cities have become owners of large tracts of lands which have reverted to them from private owners unable to continue the payment of taxes. Since the city can neither tax nor sell this land at the present time, it is compelled to turn for revenue to land in use. A policy of taxing idle land heavily is justified only if it raises revenue. Incidentally it may result in bringing the land into use. In any case it is less satisfactory than fairly simple measures which may be adopted to prevent the land being diverted from use to idleness. It will probably be found necessary in most cities to tax both land and buildings. Idle land or large lots should be taxed at the same rate as used land or smaller lots. This may occasionally be a hardship in the case of large estates which have been surrounded in the growth of the city. Owners may desire to keep these intact, but in doing so they should recognize that this adds to the expense of city services and to the inconvenience of citizens who are forced to live farther from their work.

If it is found possible to exempt buildings, this may be accomplished in part by assessing all houses at a percentage of their value. A sounder principle, however, would appear to be, to grant an exemption on dwellings to an amount which will provide houses having a minimum standard of comfort. Any value beyond this would be taxed. Thus, a house worth $1,500 would be entirely exempt from taxation, if $1,500 was regarded as representing a reasonable minimum standard. a house worth $4,000 would be taxed on a value of $2,500, and one worth $10,000 on a value of $8,500. This plan is to be justified on the ground that luxuries should be taxed more than necessities. A certain advantage would accrue from the fact that so far as taxation is concerned there would be less inducement to build "shacks" as distinct from small comfortable houses. On the same principle it might be argued that similar exemption should be allowed on land, but land values in an especial degree are created by the community, and as such are more properly an object of taxation than buildings. It appears just to give buildings as compared with land preferential treatment in respect to exemption.

A plan which exempts houses to the extent of fifty per cent. of their value, but with a maximum exemption of $1,500, has much to commend it. Such an exemption would raise the tax rate, at least on the present basis of assessment, but would reduce the tax bills of the small householder. With the tax rate raised from 25 mills to 30 mills, this reduction would amount to $1.50 a month in the case of a $2,000 building on a $400 lot, or $1.88 a month when the assessment is $2,500 for the building and $500 for the lot. Where houses are rented, to ensure that small houses enjoying this exemption shall be available at a reasonable rental, it might be found desirable to require that the legal rental of dwellings assessed at, say, an amount not exceeding $3,000 shall not exceed a fixed percentage of the total assessment. By this method the object of the exemption, that is, the relief of the tenants, would be directly ensured and the benefit confined to the class it is designed to reach. Assessment of all property at its full value is a necessary condition of such tax exemption.

A second method of dealing with the land problem consists in the provision that the unearned increment or part of it shall be taken by the State when the land is sold. This was a feature of the Lloyd George Budget of 1909. It was there provided that all land should be valued, and that in event of sale twenty per cent. of any increase in value should go to the State. Up to the present little net revenue has been derived from this source, the valuation of the land having proven a long and difficult task. This device has been criticized on two grounds. (1) Because, while admitting the principle that the State has a claim on the unearned increment, it still leaves four-fifths of the gain to the owner. (2) Because it does not reach property which is not sold but may bring to the owner a greatly increased annual revenue for which the community is primarily responsible.

A third method admits the same principle but is less timid as to the percentage of the unearned increment taken by the public and is equally effective if the property is not sold. It consists in taxing such increment to an amount equivalent to a reasonable interest. Commenting on the principle involved, Professor R. M. MacIver says:

> "I believe that the taxation of the unearned increment to an amount equivalent to a reasonable interest on such increment is both just and expedient. When we consider how properties along a thoroughfare, for which the public authority has paid, enhance in value, while yet the citizens as a body have to pay the cost from which the enhancement comes, it seems only reasonable that the public should share in the benefits which they thus incidentally provide for a favoured minority. If in the past Canadian cities had only been able to gain back by taxes part of the value which they have produced at public cost, their finances would be to-day in an infinitely better position and they would have been able to emulate any cities in the world in enterprise and in amenities. There are, of course, many other arguments which may be urged, such as the limitation of injurious speculative tendencies, but the one above mentioned seems to me conclusive by itself."

This method has been stated in detail by Mr. G. Frank Beer:

> "The Land Surtax is a special tax graduated from 1 per cent. to 3 per cent. levied upon values which are not the result of improvements made by the owner. It applies only to the increase in value, and its object is to prevent speculation in land, and to secure for the public revenue a portion of the value which is commonly referred to as unearned. Assessment at full value must precede the application of this tax. An illustration will explain its operation.
>
> In 1915, a piece of property is assessed at $10,000, and the general tax rate is 20 mills.
>
> In 1916, if the property is found to have increased $2,000 in value, the general tax rate will be levied upon $12,000, and a surtax of 1 per cent. upon the $2,000. If the property remains at this value the surtax will be increased in 1917 to 2 per cent. and in 1918 to 3 per cent., which is the maximum surtax recommended.
>
> If, in 1917, the property is found to have depreciated to its original value of $10,000, the surtax ceases. If, upon the other hand, it has further increased

in value, the surtax applies as before upon the further increase in value—1 per cent. the first year, 2 per cent. the second year, and 3 per cent. the third year.

Year.	Assessed Value.	Value for General Tax Rate.	Surtax.
1915	$10,000	$10,000	1% on $2,000
1916	12,000	12,000	
1917	14,000	14,000	2% on 2,000 and 1% on 2,000
1918	14,000	14,000	3% on 2,000 and 2% on 2,000
1919	14,000	14,000	3% on 4,000 and for each year thereafter.

The total taxes collected from year to year will be:

1915—20 mills upon $10,000	$200
1916—20 mills upon $12,000 and 1% on $2,000	260
1917—20 mills upon $14,000, 2% on $2,000 and 1% on $2,000	340
1918—20 mills upon $14,000, 3% on $2,000 and 2% on $2,000	380
1919—20 mills upon $14,000, 3% on $4,000	400

If in any year, the value of the property is found to be less than $10,000. the general tax rate will be collected upon the value as ascertained from year to year, and when the value is found to again exceed $10,000 the surtax will be renewed.

Provided, however, if the property changes ownership at less than $10,000 the surtax will apply to any value in excess of the purchase price. The new owner is not given the advantage of standing in the place of the original owner in receiving exemption from the surtax until the $10,000 valuation is reached.

In order that the sale value of land may be disclosed and evasion of the surtax prevented, sales for "One dollar and other considerations" should be made illegal.

Further provided: If at any time the property changes ownership at a price in excess of the assessed value, the price at which the property is acquired shall be the value upon which the surtax applies. For instance, if in 1915, when the assessment is $10,000, property changes ownership at $12,000, the full 3 per cent. surtax will in future be paid by the new owner upon $2,000.

If the owner of land assessed at $10,000 sets the sale price at $12,000, prospective purchasers, knowing that a surtax of 3 per cent. must be paid by them upon $2,000, will be less anxious to obtain the property at the price asked. In its operation the surtax would be a tax paid by the new owner to offset the failure of the original owner to pay taxes upon the full value of his property.

As the surtax is collectible only upon increased values, it will be to the advantage of land owners to have their property assessed at its fair market value. Failure to have this done will result ultimately in a heavy penalty by its effect upon the market value of the property. Difficulties inseparable from securing an equitable assessment are lessened from the fact that land owners are therefore interested in securing for their land a fair valuation.

The immediate result of the surtax would be the discouragement of speculation in land. Land prices would be steadied, and in cases where land was held at inflated prices, reduced, since the opportunities to make large profits by holding land idle would be greatly lessened. Land values would cease to soar, and the revenue from the surtax during the period of price readjustment

would not be large. Subdivision of land in advance of actual requirements would be checked. Land would be retained in its natural use as long as possible, since this would be found of greatest advantage to the owner. For instance, agricultural land near cities would be kept in use until the growth of the city made subdivision desirable. The result of this would be that land for housing purposes would cost a reasonable advance only over farm land value, and of this advance the municipality would receive a large share through the surtax. Advantages arising from ownership of land would be secured to those who use it—to everyone else its ownership would prove a burden.

Some of the advantages of the surtax over any plan under which the municipality benefits only when a transfer of property is made are:

It provides for elasticity of valuation to redress the ups and downs of boom activities.

It secures an immediate share in any increase of land values, a share which increases until the municipality receives annually 3 per cent. upon the amount of such added value.

It provides a more or less fixed contribution to the annual municipal revenue instead of an irregular and fluctuating contribution.

It retains this revenue permanently, as the revenue is derived from an equity in property and may be to a large degree calculated when fixing the annual assessment to meet current requirements.

Under its operation land will be subject only to its natural increase in value, and if land values are in consequence stabilized, this will prove of advantage to those who wish to use it. In so far as the surtax stimulates the use of idle land it will prove of general advantage to the community."

It is frequently found that government and municipal authorities have to pay high prices for land required for public purposes. In many cases these prices are enormously in excess of the assessed value of the land. As the public revenues are based on that value, it should have a definite relation to the purchase value for public purposes.

So far is it from being the case that the purchase value has any relation to the assessed value that there are farm lands in Ontario assessed at $41.50 per acre, for which the market price quoted by the owners is $1,000 per acre. The absurdity of the assessed value is shown in one district in Ontario where the building and site are assessed by one municipality at $78,000 and by another municipality at $5,000; both figures being sworn to under the same Assessment Act requiring a fair value to be determined.

In many cases the disparity between the assessed value and the purchase price is due to under assessment; but whatever may be the reason for the difference, the public purse has to suffer. When a municipality pays a high price for land it should have no cause for complaint if its taxes have been based on an assessed value approximating that price. But it has a grievance when it loses revenues at one end by a low assessment and pays high prices at the other end for property which has enjoyed a low assessment, especially since the inflated price is due in part to the fact that it has not borne its fair share of taxation.

The natural tendency of owners is both to keep down the assessment and to get a high price when they sell. Consequently there is need for some measure to secure, first, that owners declare the real value of their land, and, second, that in case negotiations for purchase fail they may be made to accept a price which is

approximate to that value when the land is wanted for public purposes. By public purposes is meant such purposes as parks, playgrounds, street widening, hospitals and schools, and housing schemes carried out by municipalities or by limited dividend companies under municipal control.

If a Provincial tax is to be levied on real estate, the present great variation in municipal assessment makes it indispensable that Provincial assessors be appointed to bring about an equalization of assessment. When these assessors have completed their work it is desirable that legislation be passed enabling the Provincial or municipal governments or quasi-public bodies such as housing companies organized under the Ontario Housing Act to expropriate land for housing purposes at a stated reasonable percentage above the assessed value. This legislation would result in such land bearing an equitable tax and being available without undue inflation of price for housing purposes.*

In considering the application of any of these expedients, recognition must be given to the fact that taxation reform is only one factor in the solution of the land problem, and that the primary purpose of taxation is the raising of revenue to meet community needs, not the correction of abuses. As community needs increase, as greater responsibilities are assumed—and the tendency is altogether in the direction of the transfer of responsibilities from the individual to society—fresh sources of revenue must be sought or the old sources must bear heavier burdens. It will probably be found that the taxes on land will need to be increased either absolutely, or relatively to other sources of revenue. In any case land taxation should be impartially based on the ascertained earning power of the land if put to adequate use. Value which is purely speculative, that is, which is based upon the supposed earning power of the land at some date in the future should not serve to increase the assessment. On the other hand, the fact that land is idle or only partly used—a dilapidated house, for example, occupying space that should hold a good dwelling, a shop or a warehouse—should not be allowed to reduce the assessment. The real value of the land can be determined only on the basis of actual returns examined over a period of years and in comparison with other properties similarly situated. It is a difficult task and one requiring intelligence and expert knowledge on the part of assessors.

A fair assessment based on earning capacity would go far toward solving the land problem, especially if accompanied by measures to prevent the subdivision of agricultural land into building lots before they are needed for use, or before they are provided with transportation and other necessary services. It would still be advisable, however, in order that the community may have what it creates, and in order that the tax rate may be kept as low as possible, thus encouraging industry, to make special provision for taxing values which by reason of special circumstances for which the owner is not responsible are increased more rapidly than the normal increase in a growing community. The normal increase can perhaps be provided for adequately by the regular tax rate. Abnormal increase should be the subject of a special tax. This may be levied when the property is sold, on the same principle as succession duties supplement the income tax. Once the land is valued so that the excess may be determined, the application of this form of taxation would be simple enough. It is inadequate, however, in that it may permit the owner for an indefinite period of years to profit by abnormal increase in value for which the

* See Appendix VI.

community is responsible. Even when he does sell, he returns to the community only a fraction of the excess unless a more radical method of treatment than that of Mr. Lloyd George is employed.*

Expropriation of land for use in municipal housing schemes or in schemes managed by limited dividend companies under municipal control may be necessary in order to secure the proper development of towns and cities. There can be no good reason longer to sustain a distinction between land needed for railways and land needed for houses. The distinction is especially invidious when privately owned railway companies which have only a modicum of public control have preferential treatment over municipal or quasi-municipal housing companies. Under a wise and equitable system of taxation and land development expropriation would probably be quite exceptional, since agricultural land would be offered for housing, naturally and as needed.

* See Appendix V.

Chapter IV.

SOCIAL ASPECTS OF HOUSING.

An appreciation of the social effects of housing can best be obtained by a comparison of the results of good and bad housing. Such a comparison is difficult, however, except in instances where the history of communities or of individual families can be traced from bad to better living conditions, or vice versa. Numerous illustrations of the fact that families naturally tend to accommodate themselves to the character of their environment could be given. The following description by one of the Toronto city nurses may be quoted as typical of many others which have been noted:

> "Family consisting of father, mother and six children. House had been neglected so long by landlord that walls and paint were in very dirty condition, front steps broken, windows out and altogether house presented a very dilapidated condition. Woman had apparently lost all interest in children and home. Children usually dirty and only half clothed. House filthy. About two months ago the whole family with exception of the father were taken ill with diphtheria and sent to Isolation Hospital. Our Division, through the efforts of the Division of Housing succeeded in bringing force to bear on the landlord with the result that he had the house renovated, papered, painted and repaired before the woman and children were discharged from the hospital. Now the woman takes very good care of the home and children, who for the first time are clean, and go to school quite regularly."

Referring especially to the effect of a garden on former slum dwellers, Mr. Percy T. Runton, the housing reformer of Hull, England, described a workman who found he was better situated while paying 7s. 6d. for a house with a garden than he had been when paying 5s. in a tenement.

> "How can you afford to live in this sort of house?" he was asked. "Well, you see, sir," he said, "I pay 7s. 6d. a week and I save 6d." "How do you do that?" "Well," he said, "I used to pay 5s. a week; I spent 4s. in the public-house—9s. Now I pay 7s. 6d. a week, 1s. in the public-house, and the rest of my time in the garden, and so I save 6d."*

The corresponding effect on the workman's wife is thus illustrated by Mr. Runton:

> "One day I called at the house of an applicant who was very keen on getting into the suburb and about whom I had my doubts. When I called at his house and saw it I still had doubts as to whether he was a suitable tenant, and yet the man was a typical English artisan. I was rather sorry for him because of the wife. At the end of a month she met my manager in one of the roads. She said, 'We have got in. I did not think it was going to be as grand as it is.' About a week after I met her. She said, 'We shall have to live up to it.' I said, 'That is all we want.' The result is that within three months you would not know that woman or the house from any other in the street. It was clean and the children were clean."†

Liverpool perhaps affords the best basis of comparison on a large scale.

* Transactions of the Liverpool Town Planning and Housing Conference, 1914, p. 131.
† Transactions of the Liverpool Town Planning and Housing Conference, 1914, p. 135.

By a special effort on the part of the municipality involving an expenditure of £1,250,000, a slum area was cleared of houses and the old tenants re-housed under proper conditions. Before the area was condemned the death rate in it had ranged from 40 to 60 per 1,000, of which tuberculosis was responsible for approximately 4 per 1,000. Under the new conditions the general death rate fell by more than one-half, and the average annual death rate from tuberculosis fell to 1.9 per 1,000.

Only rarely can the effect of a change from bad to good housing be definitely noted. Generally it is necessary to restrict the investigation to the obvious results of bad housing. The evils of bad housing are undoubtedly to be found in most cases among the families of unskilled workers earning in normal times from $12. to $16. a week. In the majority of cases these are not satisfactorily housed simply because they choose to occupy an insanitary or poorly built house rather than to deprive themselves of necessary food and clothing. It is generally agreed that if the worker with a family pays more than twenty per cent. of his income for rent he will be compelled in consequence to submit to privation of actual necessities.

Individual cases of bad housing, then, may be due to a wage inadequate to provide proper accommodation for a family. An additional factor, however, is the positive lack of small inexpensive houses which are at the same time comfortable and sanitary. As a result the workman is compelled to occupy (1) an insanitary house, or (2) apartments, or (3) a larger house than he needs, part of which he must sub-let to families or lodgers.

Insanitary dwellings are found in all communities, their number varying in proportion to the condition and tastes of the population and the vigilance of municipal authorities. In rural and small urban municipalities they are probably quite as numerous as in larger centres, but the problems created are not so serious owing to the healing effect of abundance of light and air. Sometimes the insanitary dwelling is an old house which has outlived its usefulness, is no longer capable of being repaired to advantage, and should be scrapped. Sometimes it is a jerry-built structure which after a few years has begun to show the defects of construction. In a new community or "boom" district it is probably a shack wretchedly thrown together, possibly in the course of a few evenings' work. Heroic as the effort which has accomplished much of the building in our suburbs may be, it is by no means economical. Material must be bought in small quantities at the highest prices and energy which should be devoted to the work of the day or to leisure or pleasurable occupation about the home has been spent on building a make-shift dwelling in default of a better method of providing homes. Whatever the type of insanitary house or wherever its location, its effect is the same. It fills hospitals with cases such as the following. A mother of nine children was recently admitted to the Toronto General Hospital with threatened tubercular trouble of the breast. On a visit to the house it was discovered that wherever the wall paper was removed the walls were found to be mildewed. Sanitary inspection alone cannot remedy the evil. The Toronto Board of Health has felt itself compelled by the shortage of houses to permit the continued occupation of dwellings manifestly unfit for habitation. It has held that when the choice is between the house and the street, the house may be allowed to stand; that until the State is prepared to build up, it must be slow to pull down.

The tenement evil has not yet developed appreciably in Ontario cities. When the use of the tenement is confined to adults, in many cases no harm can result. Where children are involved it is different. If the child cannot step outside the door of his flat without being on the property of others, or cannot play out of doors

except on the street or in the lane, proper moral and physical development is hardly possible. Tremendous values lie behind the proud term "our house". Where children are excluded, the cheap apartment,—and the tenement is simply a cheap apartment,—has as much right to exist as the dear apartment, if it secures privacy, reasonable protection from fire, separate toilet and bathroom facilities for its several tenants, and plenty of light and air. The trouble is that some of these necessary features are usually overlooked in the desire to secure economical construction. Thus the tenement becomes a menace.

Where old private residences are converted into tenement houses of a sort, and contain several families, it is particularly difficult adequately to provide light, air, sanitary conveniences and fire protection, without the expenditure of more money than the returns will warrant. Remodelling is always more expensive and more difficult than first construction, and such alterations impose an especially heavy task on building inspectors. Owing to lack of proper accommodation during the war an alarming increase in these improvised tenements has been taking place. A rather fine old home on what was once a fashionable street in Toronto was discovered during the influenza epidemic to have developed into a five family apartment house, practically no structural alterations having been made. One family lived in the garret, one in the basement, and one and two families on the first and second floors respectively. In September 1918 the Home and School Council reported an even worse case. The investigator had been in touch with the case for nearly two years. The house had eight rooms and was occupied by five families. The first consisted of a man and wife and one child, the second and third each of a man and wife and two children, the fourth of a man and wife and four children, while the fifth consisted of an aged couple and two boarders, in default of children. Every room except the kitchen was used as a sleeping room. In two of the families babies were born in the summer of 1918, but both died after a few days.

The trend of modern housing reform is definitely away from the tenement. At the Liverpool Conference of 1914, it is true, Mr. F. T. Turton defended the tenement, arguing that circumstances alter cases and that in Liverpool "the tenement system is both suitable, and in order to efficiently carry out our policy of rehousing, even necessary."* He pointed out that he had tried as far as possible to get away from the tenement look, as, for example, by the provision of a balcony on which each front door opened. For another class he had provided a number of two-storey flats in which he brought the front door of each house "right away down to the street."† By means of the tenement, he says, "I have got an amount of population on the ground which I could not otherwise have got."

But the world has moved since 1914. Even in Scotland, the home of the tenement and economy, the Royal Commission on Housing, which continued its deliberations from October 1912 to September 1917, has failed to commend the tenement. In its epoch-making findings, extending to 460 folio pages, Chapter VIII, of the Majority Report, is devoted to the merits and demerits of the tenement. The minority here appears to be in agreement with the majority in expressing a preference for the cottage or flatted-villa type of house. The general impression is that the tenement is even economically inferior to the cottage, and they point out that advanced working class opinion condemns the tenement system.

* Proceedings of Liverpool Conference, pp. 127, 128.

† This is the duplex house recommended by the Ontario Housing Committee as a substitute for the tenement.

In the New England States the tenement has been widely used. In Boston, for example, more than fifty per cent. of the houses are wooden three-deckers, while no less than 5,000 tenement houses are inspected in that city. In New York the forces of progress and reaction for years have devoted much attention to the struggle over the stiffening or relaxing of tenement regulations. In Pennsylvania the small house has been safeguarded by a law passed in 1895 "before the business interests behind the beginnings of a tenement house movement were strong enough to offer serious opposition. This law makes the building of tenement houses so costly that it has practically stopped their erection for the poor."* Mr. Lawrence Veiller, Secretary of the National Housing Association, probably voices expert opinion in the United States when he says: "What Philadelphia has done every other city in the United States can do except New York and possibly Boston. We should hear no more talk of tenements in our other cities, model tenements or others. Let our philanthropists who wish to build houses for the working man do it by all means, but let them build small houses, not gigantic barracks of tenements. The tenement is neither necessary nor desirable."†

With the choice still before us in Ontario, it would be folly to fly in the face of the experience of older countries.

The third result of a shortage of small inexpensive houses is the occupation of larger houses than are needed and sub-letting to families or to lodgers. The extent to which this practice has been followed in Toronto may be judged from the fact that out of 13,574 houses, in representative districts, intended for single families, 8,739, or 64 per cent. were found to be occupied by two, three or more families or by lodgers. The general effect of such conditions on family life, to say nothing of health or efficiency of workers, cannot be good. When a man and his wife cease to have a home of their own, when they are crowded with their children into too close proximity with other families, so that they cease to have any secure privacy, and there is no plot of earth on which they can stand as sole owners or tenants, there necessarily follows a lowering of self-respect and a loss of the sense of sturdy independence, factors which are essential to sound moral fibre. Especially dangerous is the condition where the use of bathroom and toilet is common to the several occupants. There are cases, no doubt numerous cases, where sub-letting has no serious results. Indeed in so far as it relieves the financial strain it has a positive benefit. But the "take a roomer" campaign common during the stimulus given to manufacturing by war orders in the cities of the United States, and appearing in at least one of our more ambitious cities in Canada, is to be criticized as placing a severe strain on family life, and not infrequently inviting unhappy results.

The interests of the unmarried worker usually are best looked after in regular rooming houses. In the case of young women these should be carefully supervised. In supporting the position taken by the Dominion Council of the Y.W.C.A. and the committee which is urging the formation of a Social Hygiene Commission, the Ontario Housing Committee addressed the following letter to Ottawa:

> "One result of our investigations into housing conditions has been the realization of the extent to which single men and women have been compelled to find accommodation in private houses. Occasionally this may prove a satis-

* Helen L. Parrish, One Million People in Small Houses (Pamphlet of National Housing Association), p. 6.

† Proceedings of the National Housing Association, Vol. I, p. 10A.

factory arrangement, but frequently it has unhappy consequences. Generally speaking, it is greatly to be preferred that accommodation should be provided in establishments built for the purpose and properly supervised.

Since the Government is prepared to facilitate the building of houses for working men and their families, it would appear to be equally in the public interest that it should concern itself with the provision of suitable accommodation for unmarried workers. Particularly is this a necessity with young women who are subject to many temptations when left to their own resources in securing boarding houses.

It seems to our Committee that organizations which provide accommodation for young women and whose main object is to safeguard their welfare and not to make profits, may very properly receive government assistance in the same way as it is given to limited dividend housing companies."

By courtesy of Mr. Thomas Adams.

British War Housing, Coventry. Adapted for girls' residential clubs.

Since the above communication was written, the following resolution has been forwarded to the Committee from the Big Sister Association:

"Whereas, in the experience of the Big Sister Association it has been clearly demonstrated to them that the present bad housing conditions which intimately affect many of the poor in this city are conducive to uncleanliness, disease and immorality; and whereas delinquent girls come for the most part from homes which are undesirable from the point of view of over-crowding and lack of proper sewage and toilet arrangements; be it therefore resolved that this Association deeply deplores these existing conditions and urges legislation on the part of the Provincial Government at the earliest time possible during the coming session."

In order to secure definite information from social workers a questionnaire prepared by the Ontario Housing Committee was distributed through the co-operation of the Social Service Council and the Neighbourhood Workers' Associations. The information received from Toronto was particularly complete. Mr. F. N. Stapleford, Secretary of the Neighbourhood Workers' Associations, had the city divided into sixteen districts, distributed as follows:

Districts:—

1-10 College to the Bay; Yonge to Bathurst.
11 Dovercourt west to the city limits; Bloor north to city limits.
12 Bloor to the Bay; Yonge to Don River.
13 East of the Don River.
14 Bloor north to the city limits; Dovercourt and Oakwood east to the Don River.
15 North Toronto.
16 South of Bloor; west of Bathurst.

Summaries of the information collected are given below in answer to six questions submitted.

Question 1: To what extent are families doubling up when they should be living singly?

All but four of the sixteen districts reported doubling up to prevail to a considerable extent. Where an estimate was given as to the number of houses in the district containing two or more families it varied from 20 per cent. to 50 per cent., and went as high as 75 per cent. in the case of one district. Instances were reported as being numerous where families of five or six lived in three-room flats, and certain parts of the city have become rooming house sections, where from three to six families live in one house. In one case three families were found inhabiting a six-room house. Two families, with eight children and three adults lived in two of the rooms, while the other four rooms were occupied by a family of six children and four adults. One family of four was found living in two rooms, and all sleeping in one, with the mother, an advanced case of pulmonary tuberculosis. Generally, however, the houses are occupied by two families only, the bath-room flat being sub-let.

Question 2: To what extent are families living in single rooms?

Nine of the districts reported a good many cases of families living in one room. The coal situation in November and December, when the survey was made, was regarded as accounting for some of these cases. In North Toronto a number of one-room shacks, originally intended to be merely temporary quarters, continue to be occupied by whole families. Districts which reported few families living in one room described the occupancy of two rooms by a family as being quite common.

Question 3: To what extent are families taking in boarders, with bad results?

Information on this point was difficult to obtain and was procurable in most cases only as instances happened to come to the notice of the nurses or of organizations like the Big Sister Association. However, nine of the districts reported instances as having been observed.

Question 4: Has the tenement evil developed in your locality?

From the answers to this question it appears that the tenement has not yet developed to any great extent in Toronto unless single family houses, occupied by several families, without proper sanitary alterations, are regarded as tenements. Where tenements have been built apparently they are not always satisfactorily equipped. A bad example was instanced in the district east of the Don. The building had no bath, the apartments were very small, dark and insanitary, and there was only one toilet for every four apartments. Another set of apartments in the same district, situated over stores, was described as being reached only through a filthy lane and shed at the rear. The ventilation and lighting were poor and there was a common toilet for three families.

Question 5: Are many people living in houses which should be condemned, but are allowed to remain in use because of a shortage of houses?

Only four districts were reported as free or nearly free from this form of housing evil. All others reported a very serious situation to exist and in several cases names were given of streets all of whose houses were a menace to the health of the community. In some cases, even where the houses had been condemned, the landlords were still collecting rent. The following instances were reported from one of the areas: "Family living at — Queen St. E., in an old store which has been turned into a dwelling. No conveniences; outside toilet used by anybody who cares to use it. Family do not use toilet as they are afraid of disease and resort to other insanitary means." "— Gerrard East. Six in family. House very damp and cold. Walls outside need repairs. Rain comes in, and plumbing poor. Cellar has earth floor. No insurance can be secured on house owing to defective furnace." "—— Street. Mother and five children with male boarder. House always dirty. Outside toilet. Entire street should be condemned." "——, a row of four-room houses, outside conveniences, ground damp and some of houses in dilapidated condition."

Question 6: Is rental taking more than 20 per cent. of the income in many cases?

The results of the investigation seem to show that in many areas a considerable proportion of the families were paying more than 20 per cent. of the income in rental. Several districts reported an average weekly wage ranging from $16.00 to $20.00, with rent from $20.00 to $30.00 per month. Of numerous instances reported from various districts a few typical examples may be mentioned. One family with a monthly income of $65.00 paid a monthly rental of $18.00. From North Toronto came the story of a deserted wife with four children, making irregularly $9.00 per week and responsible for the rent of a $16.00 a month house. A young widow of a soldier, the mother of one child, was reported as paying $36.00 a month for three rooms in a bathroom flat in a quiet respectable street, her income being $72.00 a month.

A very careful survey of sections of Toronto was made by members of a class in the Social Service Department of the University of Toronto, under the direction of Dr. W. A. Riddell, namely, Misses F. W. G. MacDonald and M. K. Nairn, and Mr. J. E. Dobbs. Districts of single family houses were selected for investigation, and the part known as "The Ward" was not touched. In order to secure a cross section of the city the work was done on streets running north and south. Every tenth house was visited and data was made available concerning 348 houses.

One group consisted of 235 dwellings. Of these, 42 were of five rooms, 84 of six rooms and 52 of seven rooms. Nearly 20 per cent.—42 out of the 235—were found to be insanitary, either from lack of proper conveniences or from being in bad repair. Perhaps the most striking feature of the investigation was the revelation of the fact that only 45.1 per cent. of the houses were occupied by a single family. The remainder, 54.9 per cent. were occupied by two or more families, or by boarders in addition to the one family. To such an extent then has the lack of housing accommodation affected family life in these districts of the city, occupied in the main by Canadians of native or British origin.

Another group of 113 houses was investigated. Small houses were more in evidence than in the first group, only two being of more than six rooms. Rooms were sub-let to roomers in 22 houses, and to families in 14. Owing to the tendency in the larger houses to sub-let it was noted that the number of persons per room increased from 1.00 in the four room houses to 1.10 in those with six rooms. While a considerable proportion of these houses was reported to be in bad repair and insanitary, no definite statement was made as to the actual number unfit for habitation. Wet cellars were found in eight houses, in seven the roof leaked, and in four both the roof and cellar admitted water. In no case was there more than one bathroom or toilet, and 57 houses were without bathrooms, while 28 were without inside toilet. In the group of 235, only three houses (all three of the duplex type) contained more than one bathroom. There were no bathrooms in 79 houses, and in 47 cases the toilets were outside.

If statistics carefully prepared for Toronto are characteristic of the situation in other urban centres of the Province, and surveys carried out in several places before the war would seem to indicate that they are, the housing evil takes the form of an undue proportion of wages paid in rental, or of over-crowding, or of the occupation of insanitary dwellings.

In Toronto the first conditions prevail to a very marked extent. In a very large proportion of cases more than 20 per cent. of the income must be paid out for rental. So far as could be learned from meagre information from outside points, this is not, generally speaking, true of the smaller communities of the province.

Overcrowding may take two forms. The more obvious is that producing what are known as slum conditions, where members of the same family are compelled to live together in crowded quarters. In this form, overcrowding is not general in Ontario, in spite of the fact that bad instances of it have been brought to light in Toronto and other places. In the group of 235 houses, the average number of persons per room of the house ranged from about 1.03 in the houses inhabited by English-speaking people to approximately 1.05 in the houses occupied by "foreigners." This condition cannot be described as unsatisfactory. It must be borne in mind, however, that these were in areas of small houses, and there are sections of Toronto where a much worse condition prevails.

The more insidious form of overcrowding is that of sub-letting to roomers or families. Six persons in five rooms is not objectionable if all are members of one family, but if some of these six are roomers the situation is quite different. Sub-letting is becoming increasingly common, as is shown in reports from the Social Service Council, the Neighbourhood Workers Associations and other sources. It was found to exist in over half of the group of 235 houses. Especially was this true of the houses where there was only one wage-earner in the family owning or renting the house. The low paid wage-earner, with a family dependent solely

on his earnings, can rarely afford to pay the rental charged for adequate accommodation, and must resort to sub-letting. Out of 129 houses in which sub-letting was reported only three were fitted for occupation by more than one family. These were duplex houses, and they were the only dwellings which contained more than one bathroom.

From the information obtained from all sources, it would appear that the most widespread form the housing evil takes is the occupation of dilapidated houses, or those lacking proper sanitary conveniences. The specific data supplied by the Social Service Class survey gives an idea of the proportions it has attained in the sections of Toronto investigated, while the Toronto Housing Commission reported 1,538 of the 13,574 dwellings visited to be dilapidated and unfit for habitation.

By courtesy of H. B. and L. A. Dunington Grubb.

British War Housing, Well Hall, Woolwich.

But it is by no means confined to Toronto. To a greater or less degree no doubt it exists in every municipality, town and city of Ontario, being aggravated by reason of the expense of making repairs during the war.

Discontent and inefficiency are the twin products of bad industrial housing. This has long been recognized in Great Britain by economists. The exigencies of war production have only served to emphasize the need of the provision not only of good houses but also of those features which come under the general name of amenities. Referring to the provision of amenities, Mr. Frederick L. Ackerman, the distinguished American architect, reported on his return from inspecting British war housing:

"Owing to the urgency of war's demands, the scarcity of labour and materials, in some cases the immediate erection of these was omitted from the construction programme. It is significant that very shortly after the plants were put into

operation, every possible source of energy was then directed toward the immediate erection of these missing elements. These were added for a very definite reason: It was hoped that by their addition to the housing elements the very serious daily labour 'turnover' would be reduced. Such proved to be the case, and in the latter schemes, it is interesting to observe that the construction and provision of the amenities goes forward at the same rate of speed as does the erection of the cottages and the plant."*

During the recent British elections housing became a matter generally discussed on the hustings. Mr. Lloyd George himself made the statement that had the Government's housing policy been put into operation twenty-five years ago the British Army would have had another million men available when the war started. Scotland, in the past, has been devoted to the tenement, and Mr. Thomas Geggie, in a recent despatch, has this to say of the results:—

> "In no city in Great Britain are the housing conditions quite so bad as in Glasgow. With a population well exceeding a million, over 50 per cent. of the people are living more than two in a room, nearly 30 per cent. are living more than three in a room, while one in every ten are living in such conditions of overcrowding that there are more than four persons per room. People who express a mild wonder that Glasgow should be known as the 'home of Bolshevism' may find, in these figures, much to ponder over, and it need occasion no surprise that locally housing has been placed in the forefront of the election things that matter."

The company housing enterprises in the United States, numbering in all more than a thousand, afford sufficient evidence of the economic advantage of good houses. Of recent years, through the efforts of the National Housing Association and kindred organizations, the effect of the character of homes available in city and country on the political and social outlook of the people, has been receiving increasing attention. A subject which was once approached largely from the economic or at best philanthropic point of view is now coming to be regarded as one in which the State is vitally concerned.

In Ontario the opportunity is afforded of achieving a policy which shall properly correlate the social and economic, and eliminate the philanthropic. The provision of good houses for the people is not a fad for philanthropists. It is a common duty which cannot be shirked without national dishonour and peril.,

* The Housing Problem in War and in Peace, p. 31.

Chapter V.

RURAL HOUSING.

Urban development and urban housing cannot properly be considered apart from rural development and rural housing. Only as the city and the country are permitted and encouraged to co-operate can satisfactory social and industrial conditions be achieved or maintained. It is no longer contended that of necessity the city depends for its life blood on the virile population of the country. The city of the future may and should be healthful and self-perpetuating. With proper city planning, with adequate sanitary and building supervision, with shorter hours of labour, with more general provision for recreation, the city worker is assured an opportunity to live and enjoy life from generation to generation. But something of the attractiveness of the country must be introduced into the city, and the best that is in city life must be transferred to the country if either is to realize its possibilities, and if the general welfare is to be attained.

Rural housing may be of three kinds: (1) That contributory to a factory built in the country. (2) That provided for men who prefer while working in the city to have a piece of land and live at a distance from their work. (3) That provided for those actually engaged in agriculture, either as owners or lessees of farms, or as labourers.

Separate industrial villages in the country are subject to the general principles governing urban developments, differing only in the fact that they have the advantages of cheap and plentiful land, and of starting with a clean slate. These advantages have appeared to be so important that a company like the United States Steel Corporation of Canada has started a new town at Ojibway, rather than avail itself of such inducements as the border cities or other established manufacturing centres would have been prepared to offer. Scores of such towns have sprung up within the United States, and they have obvious advantages, especially when located near a large labour market.

The demand for the second class of rural housing is likely greatly to increase in the near future. The development of radial lines, the provision of commutation tickets on steam lines, highway improvement and the cheapening of the automobile will serve to make it easier for city workers to live in the country. Already in the vicinity of Toronto a considerable number of homes of city people have been established. For the most part they are owned by men of means who use automobiles to take them to and from the city. A few places such as Islington are beginning to be built up by people of more modest income who trust to the steam and electric lines to carry them to their work in the city. They are attracted by the lower taxation and cost of land, by the opportunity of having a garden and a few hens to keep down the high cost of living, or by the lure of open fields to those who have never been compelled to earn a living from them. This movement is certain to increase with improvement in transportation. For many reasons it should be encouraged.

Belgium is the country which in happier days had developed this half-city, half-country life to a greater extent than any other State in modern times. Mr.

Rowntree in his "Land and Labour Lessons from Belgium," points out that Belgium has 3,029 miles of railway for every hundred square miles of country, standing first in the world in this respect. Great Britain comes next with 2,233 miles of railway per hundred square miles. All the main railways of Belgium are national property under State management. In addition to her ordinary railways in 1908, Belgium had 2,586 miles of light narrow gauge railways, and had projected lines which when completed would have given 3,859 miles in all. Railway tickets are remarkably cheap.

"Thus, a ticket enabling a workman to travel three miles (5 km.) to and fro for six days cost ninepence, or about a farthing per mile. If the distance to be travelled each way daily is 6¼ miles (10 km.) the ticket costs one shilling, or 1-6d. per mile. For 12½ miles (20 km.) each way it costs 1s. 2½d. a week, or 1-10d. per mile. For 25 miles (40 km.) each way it costs 1s. 7d. or 1-15d. per mile; and to travel 62 miles (100 km.) each way daily, which is the maximum distance for which workmen's tickets are issued, costs 2s. 6d. per week, or 1-25d. per mile. Other special tickets, available for one double journey each week, are issued, which are almost exclusively used for the longer distances. The price of these also is extraordinarily low. Thus, for a double journey of 25 miles (40 km.) each way the cost is 9½d. or 1-5d. per mile. For 62 miles (100 km.) each way it is 1s. 3d. or about 1-8d. per mile; and for 124 miles (200 km.) each way it is 2s. or 1-11d. per mile."*

Mr. Rowntree estimates that as a result of these facilities approximately one-sixth of the working class population use cheap tickets to go to and from their work. A man may own his home and his plot of land without feeling that by reason of such ownership he is tied to his employer. Mobility of labour and freedom from unemployment are thus measurably increased, and temporary unemployment has not the same terror for a workman since he can fall back on the tillage and produce of his garden for occupation and sustenance. On the basis of investigation labouriously made through a period of nineteen months, Mr. Rowntree estimated the total number of proprietors in Belgium at 719,986. This is equal to 10 per cent. of the population, and 18 per cent. of the population over twenty-one years of age. Of this number, 17 per cent. own less than ⅛ of an acre each, 35 per cent. from ⅛ to 1 acre each, 27 per cent. from 1 to 5 acres each, and 16 per cent. from 5 to 25 acres, while only 5 per cent. own over 25 acres. In 1912 a committee appointed by the Chancellor of the Exchequer in Great Britain reported:

"Whereas in Belgium only 23 per cent. of occupied persons are employed in agriculture, no less than 56½ per cent. of the total population are living in country districts. This means that about one-third of the urban workers are rural dwellers. The Antwerp docker, on slack days, instead of hanging around the docks, spends the time in his garden. He may not earn so much as if he were at the docks, but he is infinitely better off than if he were doing nothing, not only financially but physically, morally and psychologically—for nothing demoralizes a man sooner than unemployment. The Brussels bricklayer who lives outside the city does not come in during slack times. He leaves what bit of work there is to town dwellers and occupies himself usefully on his land."†

In other countries the advance made in means of transportation has greatly facilitated decentralization of population. The possibilities of electrical develop-

* B. Seebohm Rowntree, "Land and Labour Lessons from Belgium," p. 289.
† Report of the Ontario Commission on Unemployment, p. 47.

ment will contribute to the same results in Ontario. Foresight and expert assistance in planning and developing rural areas which are accessible to urban workers will be necessary if comfort and good sanitation are to be secured. Something better should be possible than the unsightly shacks now scattered in open country around Toronto at intervals as far north as Richmond Hill, and as far west as Port Credit. Living conditions in suburban districts, apart from the evils of congestion, are frequently quite as bad as anything to be found in the slums.

It is in the general interest that rural development should be wisely directed. Such direction concerns the city in which these country dwellers will work, but it concerns even more the rural municipalities. Neighbouring farmers will be benefited both in respect of social conditions and in respect of casual labour if desirable houses are built on small allotments. But in case the houses are occupied

By courtesy of Mr. Thomas Adams.

Bad suburban conditions in an Ontario city.

by families who have moved to the country in order to escape sanitary and other regulations required by the city, the result will be injurious both to the established rural population and to the newcomers. Slum conditions must be avoided in rural areas as well as in urban centres.

The housing on the outskirts of cities and towns requires special consideration. Already it has assumed such proportion that it cannot be neglected. For instance, the report of the Civic Transportation Committee for Toronto published in 1915, states that there is a built-up area of some 4,724 acres contiguous to the city, and containing 31,400 people. A very large proportion of this area and perhaps half of the population is not included in any one of the smaller urban municipalities adjacent to the city. The occupation and interests of the people who reside within this area are generally in the city, and are foreign to the occupation and interests of those who control the affairs of the rural municipality. Con-

sequently this class of housing is likely to be neglected. To an especial degree it is necessary that the Provincial Government should have oversight over this form of rural development. A certain recognition is given to this fact in the Ontario Act of 1918 respecting Surveys and Plans of Land in or near Urban Municipalities. Under its provisions the Railway and Municipal Board, representing the Provincial Government, stands as a court of reference between the urban and rural municipalities wherever a difference may arise as to the development of land adjacent to the urban municipality and within the rural municipality. In the absence of any differences only in these cases is a reference to the Board obligatory, namely, where what is known as a general plan of development is contemplated, or where a highway of less than 66 feet is proposed, or where it is desired to enlarge or reduce the urban sphere of influence.

In fact, a dominant interest on the part of a city, town or village in the territory immediately surrounding it is conceded to exist. This territory is known as an "urban zone," which term in the case of cities means the area within five miles of the city, and in the case of towns or villages the area within three miles of the town or village. On the application of the urban municipality the area may be enlarged or reduced from time to time by the consent of the Ontario Railway and Municipal Board, other municipalities affected having a right to a hearing before the Board in case they disapprove. The urban municipality may draw up a general plan for the development of this urban zone, showing highways, parkways, boulevards, parks, playgrounds and other public grounds or public improvements, and this plan if prepared by the urban municipality must secure the approval of the Ontario Railway and Municipal Board before being finally adopted by the Council. Here again the rural municipality is to be informed of the proposed plan and in case of objection, may appeal to the Board. It is provided also in the Act that the Council of the urban municipality may hand over the duty of preparing such plans to what is known as a "Town Planning Commission" consisting of the head of the municipality and six other persons elected for a period of three years.

In the case, however, of a plan of survey and subdivision of land in the urban zone which is partial rather than general, there may or may not be a reference to the Board. The urban council is empowered to accept and register such plans—without consulting the provincial authority. There appears to be only one exception to this, namely, where the plan of survey and subdivision provides for a highway of less than 66 feet, in which case the plan must be submitted for approval to the Board. It is provided that in such plans of survey and subdivision of land regard shall be had to such matters as the probability of the limits of the urban municipality being extended to include the land in question; also to the number and width of highways and the thoroughfares connecting with the city, to conformity with any general plan which may have been adopted, and to the size and form of the lots. It is further provided that when the land of which a plan is submitted is so situated in relation to other lands that it is expedient that all such lands should be treated as one entire parcel, the owners of all such lands may be notified to attend before the Council or the Board to consider the approval of the plan.

The importance of the Act becomes apparent, when it is realized that even within the zone areas of three and five miles specified, and these areas may be increased, a very large proportion of rural Ontario is included. It would appear that the interests of suburban and rural development would be served if in

certain respects the provisions of the Act were altered or extended, and it is recommended that:

(1) A general plan of the environs of every urban municipality where population is extending into rural areas should be made by the municipal council, which should for this purpose delegate its powers to a town planning commission, and the plan should be submitted for approval to a Provincial Board with a practical knowledge of town planning. In default of such action on the part of the municipality, the plan should be prepared by the Provincial Board directly. At the time an application for the subdivision of rural land is made to the Municipal Councils interested a copy of the application should be filed with the Provincial Board, and a general survey should be instituted before any development is permitted.

(2) In every case the Board should be consulted as to the number, width, direction and form of construction of streets, the number of houses to the acre, and other matters directly concerned with town planning. Under the present Act their reference to the Board is optional so long as they are not part of a general plan of development, an exception being the planning of streets narrower than 66 feet. The difficulty in such an arrangement is that a number of such partial developments following at intervals eventually will produce a patchwork which will render a proper general plan difficult and expensive, if not impossible. An additional reason for the reference to the Board is the fact that the urban and rural municipalities are both affected by the development, and the Board can see that the interests of both are conserved.

(3) Provision should also be made for the proper regulation of the development of new industrial villages in the country. These may well be garden villages, combining the advantages of city and country. It is not beyond the realm of possibility that there may be established in Ontario garden cities like Letchworth—self-contained with their factories, their houses surrounded by gardens, and their agricultural land embraced within the city. It is quite conceivable that in particular cases neither the rural nor the urban municipality may be inclined to encourage such developments, and that they can be realized only with the assistance and under the supervision of the Provincial Board.

The problem of strictly rural housing, that is, the problem of building houses for farmers and farm labourers is one which is only now beginning to receive on this continent the attention it merits. Too many farm houses are perversions of town houses, sinning against all the canons of good architecture. Rural Quebec can teach rural Ontario something in this respect. The square stone and brick houses of the middle of last century declined sadly in the creations of a generation later. For the present report, however, our concern is not so much with the farm-house itself, but with the house for the farm help, the counterpart of the industrial house of the city. These houses, of which types are shown among the plans, would also be adapted to the needs of pioneers in newer parts of Ontario.

In considering the needs of houses for agricultural labourers, the various district representatives of the Department of Agriculture were asked:

(1) To estimate the proportion of farms which had satisfactory cottages for their help;

(2) To make any suggestions which might occur to them as to the best means of encouraging the building of houses, or any other suggestions which they might care to offer.

The greater number of the District Representatives felt unable to state the percentage of farmers having cottages for their labourers, but estimates were made for the following counties:

Algoma.—Only two men.
Bruce.—Very few.
Dundas.—7.5 per cent. (as per survey made by Commission of Conservation).
Dufferin.—Very few.
Elgin.—About 5 per cent.
Halton—7 to 10 per cent.
Lambton.—A few, but almost 30 per cent. have an extra house through purchase of another farm.
Northumberland—159 out of 826 farmers in Murray Township have a second house.
Oxford.—Not more than 8 per cent.
Perth.—Not over half a dozen farmers.
Peterborough.—Not 1 per cent.
Prince Edward.—About 25 per cent.
Renfrew.—Less than 5 per cent.
Simcoe.—Very few.
Victoria.—Possibly 10 per cent.
York.—Very small number.
Welland.—Labourers' cottages extremely rare.

The following excerpts from their letters contain valuable information bearing more or less directly on rural housing:

"As far as I can judge those men who had cottages for their help and hired by the year, knew little or nothing about the shortage of labour this year."

"The thought occured to me that the Provincial Government could be prevailed upon to set aside a certain sum of money to be loaned through the township councils in a similar manner to that in which the tile drainage loans are let out. The township in this case would collect through the taxes and the debt could be extended over a term of twenty or thirty years so that the payments would be light every year. It has been only recently that the farmers in this country, which is not thickly populated, have made any attempt to hire by the year as they have been satisfied to hire only during the busy months, for instance, during haying and harvest. However, the demand for men the year round is getting greater all the time, and we would expect that farmers would take up a fair offer and build a cottage suitable for their help."

"Owing to the fact that this is a comparatively new district, there has not been the same necessity as in some other places. A few of our farmers have, however, built new houses for themselves before the old ones had outlived their usefulness and are keeping the old houses for the hired help. It is not likely that much more than this will be done in the matter in the immediate future in this district."

"Farmers are not prevented from building houses for their help altogether because of lack of financial ability, although in many cases financial reasons

may have a bearing. Many farmers do not wish to employ a man by the year and believe that it is more satisfactory to have a single man who will board in his own house, and there are some advantages in this arrangement. It is a live question with very many farmers whether or not they can profitably employ help on their farms under the present scale of wages. Many farmers have taken the stand that it is more profitable to do what they are able to carry on with their own help and it is undoubted that these men are saved a good deal of worry."

"Generally speaking, farmers who have houses find it easier to obtain help, and I also believe the help is more satisfactory."

"Throughout this county there is very little if any winter dairying carried on. The farmers merely winter their cattle over to make out of them what they can during the summer months. Now, if they had cottages and kept help the year round, they could easily practise winter dairying and make considerable out of their cows during the winter months, the slack period on most farms. The cows, too, would yield nearly as much during the summer months as they do by the present system. It is a very difficult task, however, to persuade farmers of this."

"It would seem that, if money were readily available at a reasonable interest, farmers would build comfortable houses for their help. It looks all very well, yet we know that for a great many years money was available for underdrainage purposes at a low rate of interest, and farmers did not make use of it. In some sections of Ontario they can get plenty of it, but in others they have not used it. The farmer has to go to more trouble than it is generally worth. If a means could be arranged whereby this money could be clearly available, I am of the opinion that it could be utilized to a greater extent."

"The labour situation is so very serious now on the farms that I am at a loss to know how you could encourage the building of houses. A man phoned me yesterday that he had 90 barrels of apples that would spoil on the trees unless he could get someone to take care of them, and there seems to be a great scarcity of men and a consequent waste of food materials in Ontario this month (October). Of course the labour situation may be better next spring."

"I wish to say that I think this is a step in the right direction and something which will do a lot to improve the farm labour situation. If our Councils could be encouraged to take up this work, I think that much could be accomplished and that many of the farmers would avail themselves of the opportunity of borrowing money for the same. One farmer suggested to me that our Councils take up this matter, and that they build houses in the small villages and hamlets throughout the county, and that these in turn be rented to men who are willing to work on farms in the district. This, in my opinion, might be worked to a limited extent, but I believe that the houses would be better on the individual farms."

"It is my opinion that the lack of tenant houses on the farms is the cause of a great deal of our labour problem."

"I am glad to note by your letter that an effort is being made to assist in the building of tenant houses on the farms. This is one of the greatest needs in this county towards solving the labour problem. Any man who has a house has experienced little difficulty in securing help, while the farmers depending on single men have had a great deal of difficulty in securing reliable men."

"As far as I can see, wherever there are two houses on a farm they seem to be able to have them occupied, and this means that there is a little more help available, especially in pressing times like these. . . . I have observed on more than one occasion that farmers living near a village where cottages can be rented have less difficulty in securing hired help. I am heartily in accord with the idea of getting farmers to build more houses on their farms, for I believe that if there were a small cottage on the farm in lots of the districts, many farmers' sons would get married and live in these cottages for some little time with the expectation of some day in the future managing the farms for themselves."

"I may add that it is my opinion this building of houses for farm labourers has been neglected solely on account of lack of funds. In most cases the farmers have all they can do to pay hired help, let alone building houses for them. I think that the solution will come when farmers operate larger farms, thereby increasing their income. I am of the opinion that the greatest weakness in farming in Ontario to-day is that farms are too small to permit of proper equipment, such as barns, up-to-date machinery, fencing, draining, etc., and still make a profit on the money invested. You will find that a large percentage of farmers who have houses provided for farm help are those who are operating two hundred or more acres of land. I hope that the Ontario Housing Committee will be able to accomplish something definite along this line, but I do not think that any Government assistance will be of very valuable aid until the fundamental principles of profit making on the farm are adhered to more than they are at the present time."

"In fact, to my mind there are comparatively few farm dwellings planned to suit the conditions of the farmer. . . . I think it would be well if a series of plans of comfortable and convenient farm homes of different sizes and built of various kinds of material could be prepared and made available for the use of farmers contemplating the building of new houses."

"As far as I know there is not one farmer in our district who furnishes a cottage for his hired help. In a great many cases the farmers themselves are living in houses which are anything but comfortable. If anything could be done towards improving this condition I do not doubt but what the farmers themselves would be more contented, as under present conditions they do not know the comforts of a modern farm home."

"The opinion of a greater portion of those I talked with is that just at present, the cost of building materials, the scarcity of skilled labour, etc., almost makes it prohibitive to do anything in the building line at present. Farmers state that the idea is a good one and that the rate of interest is very reasonable, but that under the present conditions it would be useless

to build houses unless they had someone to put in them. Most of them claim that they have plenty of room for their farm help but there is no farm help. . . . The main argument in the minds of many men against this scheme is that their capital outlay at present on a farm, meaning specifically buildings, machinery, etc., is far too great in proportion to the returns now made, and that if they undertake further financial obligations, such as building cottages, they would only be increasing their financial indebtedness to that extent. Outside of this they mostly consider the scheme excellent and we all hope that in due time farming will be sufficiently remunerative to allow of the building of cottages for farm labour."

"The idea has just occurred to me that since the greatest drawback to the satisfactory housing of labourers in the country is due to the shortage of help, the exceedingly high cost of materials, etc., it might be possible to have some sort of a ready-made house put on the market, which could be built in two or three different styles, and which could be shipped to a prospective purchaser with all parts cut to fit, and ready to erect. If this idea were carried out, it might be possible for materials to be used to advantage, and therefore economize on the cost. Time would certainly be saved in erecting the houses, and a satisfactory house for all concerned would be the result."

"I think nothing would encourage the farmers to build more than to see that they were supplied with more satisfactory labour. Quite a number of farmers in this county have good houses on their farms, but have no men in them. Much of the labour on which the farmer has had to depend is very unsatisfactory."

"There are very few farmers in this county who supply their labourers with a cottage. Quite a number of them may have had them a good many years ago, but of late it is practically impossible to obtain a satisfactory married man with farm experience, as most men in this class could get much higher wages nearer the city, or with some of the farmers who are specializing in certain lines other than mixed farming could pay."

"*Re* the means of encouraging the supply of cottages, would say a great many of the farmers will not avail themselves of a loan, as the majority of them are in a position to put up a cottage for their men. The first thing a farmer would have to be assured of, would be that he could obtain the right kind of man and be assured that he would stay with him for more than one season."

"Farming would be a very much more attractive vocation if the rewards obtained from it were sufficient to warrant the farmer in employing help to do the greater part of the actual work, permitting him to give his time to the supervision of his farm and the looking after of the business incidental to it, adding his own labour at those seasons when the rush of work is greatest, in other words, employing by the year such help as could be kept in constant employment during each and every work day of the twelve months. Unfortunately, experience has taught us that the average farmer beginning his operations with limited capital finds that to be successful he must perform with his own hands all the work that he possibly can; calling to his assistance

employed help only at those seasons when he is unable to do all of it himself. Under those conditions the farmer has laboured from early until late giving a regrettably small amount of time to thought or planning, and the supervision of his own business affairs. He has employed help for limited periods only, and for that reason has preferred unmarried men in that they could be taken into employment for short periods without the inconvenience incidental to employing married men for like terms. In a great many cases the farmer's wife is willing and anxious to assist towards the end of a satisfactory financial balance in his farm affairs even to the extent of foregoing her personal preference and convenience in the matter of having a man board in the house. . . . It is regrettable, and yet I know of no single farm in Ontario which is carried on as a business enterprise with a paid manager and all labour performed by employees, which is returning satisfactory dividends, excepting in this statement those farms which are making a specialty of choice and exceedingly high priced live stock, seeds, or such commodities as are sold, not on the consumers' market but at very much enhanced prices to farmers or stock breeders. The profits to be made from farms conducted in this way are not indicative of the profits to be made in farming."

From the above extracts it will be seen that the estimated percentage of farmers having houses for permanent hired help varies from nothing in new districts of Ontario to 25 per cent. in Prince Edward County. In many parts of the Province the summer months are still the only very busy months. For from two to eight months—usually six or eight months—a single man is engaged. Years ago it was the general practice for these farm hands to find their way into the lumber woods during the winter months, and this is still to a degree the practice, particularly in the Eastern and Northern sections of the Province. With the gradual disappearance of our forests the difficulties of securing farm hands for the summer months will be further increased. High School boys and others who have been induced by the claims of "patriotism and production" to do "farm service" during the war cannot be expected in very large numbers to continue to fill the breach. Haying and harvesting even with modern inventions to assist will not appeal to most young people as a pleasurable occupation during July and August. It is a fine compliment to young Canadians that so many of the boys who have tasted the life of the "Soldier of the Soil" are ready and willing to carry on after the war.

Three kinds of labour will always be needed on Ontario farms:

(1) Regular experienced hired help employed by the year, of which it is perhaps safe to say that any farm which can support help employed by the year can afford to provide a house for a married man.

(2) Labour during the summer months, which in larger farms supplements the help employed by the year and in smaller farms supplies all the assistance the farmer needs.

(3) Day labour, which if available can frequently be used to advantage.

The problem of boarding the last two kinds of farm labour is frequently solved by the presence of the tenant house on the farm. The farmer's wife can thus be relieved of the necessity of having the provision of board and lodging for the hired man added to the rest of her multifarious duties, that is, unless she feels that the smallness of the revenue from the farm lays her under an obligation to contribute in this way. It is quite possible that with the increase of small hold-

ings in the country by those whose regular work is in the city, the available labour supply may be somewhat increased. Unless it is possible to develop certain lines of manufacturing and business which can employ additional labour during the winter months, it would appear that the solution of the farm labour problem lies in the arranging of farm operations so that winter and summer work will be as far as possible equalized and permanent help secured and retained by the provision of comfortable and convenient cottages.

Letters were sent to a considerable number of farmers who had labourers' cottages on their farms, and an expression of opinion was solicited on the following points:

(1) The effect on the securing of satisfactory labour of having a comfortable house for farm help.

(2) The number of rooms which such a house should contain.

(3) The practicability of installing in such house the modern conveniences which usually are enjoyed by city labourers.

(4) The advisability of having the house on the farm, rather than in a neighbouring village.

(5) The size of farm which can afford to maintain a house for hired help.

(6) The attitude of the farmer's wife to the question.

The suggestions made in answer to questions two and three are embodied in the plans of farm houses appended to the report. In reference to the size of farm required to maintain a second house most of the correspondents expressed the opinion that 100 acres is sufficient, two thought 150 acres the minimum size, while others pointed out that in a fruit farm 25 or 50 acres might be sufficient. The views held on the other points will best be presented by summarizing the replies received.

The only way to be sure of your help is to house them comfortably. A married man living in your house stays longer and is more contented, and his wife and often a son are available in busy times, or all of the time.

The only place for the house is on the farm, and not too far from the barn, so the chores can be done handy. The man who walks too far to feed his team, or milk before breakfast will not be satisfied nor give satisfaction.

The farmer's wife who once has the help out of the house never wants them back again. The man living by himself with his family boards himself at very little more cost outside of milk, summer fuel, garden, etc., and his wife will generally help him milk, and wash the tinware, if you give him good wages and treatment.

G. A. Bolton, Picton, Prince Edward County.

I consider it is the only way of securing satisfactory farm help.

By all means have the house on the farm.

R. G. Bowlby, Simcoe, Norfolk County.

The house for the hired man is much better built on the farm than anywhere else, because the farmer would prefer to have him close enough to be over in time in the morning to feed the horses before breakfast; also the farmer would not sell a piece of his land, but would be willing to allow the

hired man the use of the house and enough land around it to keep him in potatoes and garden vegetables—the same to be included in the estimate of his wages.

GEO. CROZIER, Mono Mills, Peel County.

The only satisfactory way to secure farm labour is to have a comfortable house on the farm, fairly close and handy to buildings on account of chores, and not very large.

Inconvenient to have a man around the house at all times, and his wife should be able to help the farmer's wife at times. A married man is more contented than a single man.

ED. DOCKER, Wallacetown, Elgin County.

I have always kept a married man. I have not had a tenant house on my own farm, but have always been able to rent one in the neighbourhood. The man I now have, who has been with me for five years, lives a mile away in a comfortable brick house of seven rooms with stable and garden which rents for $60 a year. It is more convenient and in most ways preferable to have the tenant house on the farm—otherwise it is almost necessary for the man to have some or all of his meals at the farmer's house, and the farmer's wife naturally would prefer to be relieved of this additional task.

In my opinion the married man is the most desirable and dependable sort of farm help, where a man is hired by the year, although single men are usually more easily obtainable in our district.

E. C. DRURY, Barrie, Simcoe County.

I have had a cottage on my farm now for nearly four years and have found it very satisfactory. My hired help have remained with me a greater length of time and have seemed much more contented than under the old system.

Most decidedly it is better to have the cottage on the farm rather than in a neighbouring village. It is more convenient for both the employer and the man himself for him to be on the premises at all times.

Both the farmer's wife and family will find this arrangement eminently satisfactory. It lightens their household duties as well as providing a family life which was impossible under the old conditions.

JOHN ELLIOTT, Pakenham, Lanark County.

I think it is a great help in securing labour, and the married men are more likely to stay for longer time.

By all means have the house on the farm. If in the village you cannot have any assistance if stock or such like are sick.

The farmer's wife is more than pleased to have the help in their own homes as they board themselves.

MRS. JANE A. FARLEY, Brighton, Northumberland County.

We find that we can get a better class of help by providing housing accommodation, and the men are less inclined to shift about.

The house should be on the farm and convenient to stables and barns, as many trips per day require to be made between house and barn.

Farmers' wives have a decided and justifiable aversion to running a boarding house.

W. F. W. FISHER, Burlington, Halton County.

The character and general conditions of the house and surroundings furnished for the hired man have a direct and far reaching effect on the character and desirability of the help you will be able to secure.

It is well to have the house on the farm adjacent to the buildings, but if possible it should be enclosed in a lot by itself so that the man might consider that part of the farm as his own domain for the time being. On farms where stock is kept it would be very inconvenient for the man to spend his time going to and from the village.

Any farmer who has steady employment for a man for eight to twelve months of the year should be able to afford a house for a farm labourer.

Very few women in this section care to board a single man in the house if it can be avoided.

I have never had any difficulty in securing help, and as a rule I find my help very satisfactory. Hire a man with a good reputation, give him a comfortable and neat house to live in and a decent living wage, and let him see that you are satisfied with a good day's work without expecting him to work from dawn until dark, and you will rarely have any trouble in keeping a man. I have had men from the munition works, from Oshawa and different industrial works, and I find that after they have had their fling at town life, they appreciate the house and garden, and milk, and fuel, etc., usually supplied by a farmer, and while they may not get as much actual money in wages, they are further along at the end of the year.

CHAS. W. FRALEIGH, Bloomfield, Prince Edward County.

I am disposed to favour the building of houses for farm labourers in groups rather than upon the individual farms, provided the distance one would have to go to work is not excessive.

Houses are not built, because in the judgment of those concerned it would not pay to build them. The loaning of money for such a purpose would have no appreciably good effect because it would not touch the underlying causes which determine whether or not such houses shall be built.

W. C. GOOD, Paris, Brant County.

I certainly am a strong advocate of farmers having suitable houses for the men. One man (a married man) stayed with me for twenty-three years; later on I bought another farm and the man there has been with me for sixteen years.

The house should be on the farm, but should have a separate yard and buildings.

The farmer's wife certainly is in favour of the separate house.

It's not what rent one makes out of the houses, but if the men are used as the Golden Rule says they will stay for years. It certainly helps to solve the labour problem on the farms as the families grow up in the district, and give help to others also.

J. C. HALLMAN, Petersburg, Waterloo County.

There is no doubt that a satisfactory house is necessary to securing and holding help.

The only place for a tenant house is on the farm.

I doubt if a loan would be of use for building, for farmers that would benefit by having houses for help are either able to build them themselves or have credit sufficient to cover the cost.

HOWARD LEAVENS, Bloomfield, Prince Edward County.

It is about thirty-five years since I built my first house for my hired help; since that time my men have usually stayed with me from three to nine years.

If the hired man lives in the village he uses considerable energy walking to and from his work, besides being often late getting to work in the morning.

My wife says she would not go back to the old order on any account—glad to get rid of the extra work and dirt made by the hired man.

Farmers should engage their men by the year. How can a farmer expect a man to work for him from March to December and then shift for himself and family through the three worst months of the year?

R. C. LEGGETT, Newboro, Leeds County.

By having a separate house you get better help, and they remain more contented.

House should be on the farm.

The farmer's wife will vote "yes" every time.

ISAAC LUNDY, Brantford, Brant County.

The only satisfactory way of keeping help on a farm is to have a comfortable house for farm help.

House should be on a farm so milking and feeding could be done before breakfast. Labour would be more steady.

Many more farmers would be leaving the farm if it were not for the labourers' cottage, as the farmer's wife is worked to death without boarding the hired help.

HUBERT MACDONALD, Bloomfield, Prince Edward County.

I have not the least doubt that a good house is a drawing card in obtaining farm help.

The house should be on the farm.

I believe all farmers' wives would rather have the hired help in a separate house.

M. B. PARKS, Woodrous, Prince Edward County.

There seems to be no trouble to secure help for a separate house. I can safely say that I have much less trouble getting and keeping men than any of my neighbours who have not separate houses, whereas single men or married men without children are hard to get, and they are not satisfied.

The farm is the place to put the house. The men are liable to be wanted at any hour in case of sickness or trouble with stock, or accident, or trouble with buildings, etc. Also in the winter time the roads are not broken for a day or two at a time.

The farmer's wife is the one who derives the most benefit from a separate house. She is not bothered with having the house tracked with dirt, she

can come and go when she pleases; extra help may be boarded in the other house. Even threshers and corn blowers are not dreaded the same, and it is much easier for her to secure her help in the house when there is no hired help. This is especially the case where there are two or more men employed the year round.

W. D. Perry, Mitchell, Perth County.

Having a separate comfortable house proves a great help in securing farm help.

Have cottage on farm.

H. H. Revell, Goderich, Huron County.

A good house is rather a secondary consideration in securing farm help. I have three good houses all empty, two of them better than the one I live in. The movie, afternoons off, etc., are not available on an average farm.

The farm is the only practicable or possible place for house in sparsely settled Canada. Belgium, England and France are very different.

Organization among farmers themselves will do more to better conditions on the farms and exact their fair share of the wealth they create.

H. T. Reynolds, Morpeth, Kent County.

I have received very little, if any, benefit from erecting a first class house including conveniences, water, natural gas for heat and light free.

A house in the village is useless for help on the farm. House should be located on the farm convenient to the stables as stock requires attention almost any hour.

I have built first class accommodation for three married men but for three years I have only had one married man. I also find, counting rent for house, fuel, light, milk, etc., also idle or empty houses, he is by far the most expensive man I have. I know of very few farmers in this county who can keep a married man at the current wage and expense of keeping up a house in addition to his own. I would consider it would be useless to build houses unless experienced farm help are to occupy them.

J. W. Richardson, Caledonia, Haldimand County.

Satisfactory help can often be secured when it could not without a house. The house should be on the farm and not too far from the farm buildings.

C. G. Ruttan, Wooler, Northumberland County.

We find that the house for the help makes it much easier to get and keep help. I advertised for a married man this fall and got 30 applications.

The house should be on the farm by all means. The advantages of country life are tenfold greater than the inconveniences. The attractions of the white collar and the eight-hour day are only apparent—they are not real. To build a house in the village would be fatal.

The farmer's wife is as much delighted with the arrangement as are the help. The plan is a very desirable one.

W. C. Sutherland, Galt, Waterloo County.

A comfortable house goes a long way towards securing competent farm help.

The nearer the hired man's house is to his work, the more energy he has to put into his work. I have always found a cold dinner or a long walk to a warm one is very discouraging when you are physically tired.

It would help the farmer's wife immensely.

If the farmer is the right sort and has a car he will take his man to town at least once a week.

JOHN P. WILLIAMS, Picton, Prince Edward County.

A comfortable home for farm help has a very beneficial effect in securing satisfactory farm labour.

The farmer will normally prefer to have the house on his own land for the required convenience to the farm and farm building. Where feasible, a house in a convenient village has its advantages. The domestic incidents of children, poultry and supplies, etc., are apt to promote disagreement, and in the majority of cases the farmer and his family will secure a desirable privacy for their family life. In my case we have some of the help housed on the farm and others near at hand which is the best arrangement when a number of hands are employed.

The farmer's wife will be the strongest advocate of separate housing in my locality. Without regard to the extra work imposed upon her by meals and lodging for hired help in the house, it interferes with the privacy of home life. This is intensified by the fact that the neighbour boy who lived as part of the family is being displaced by non-Canadians.

MCGREGOR YOUNG, Hillier, Prince Edward County.

It will be noticed that there is practically a unanimous opinion in favour of having the labourers' cottages on the farm itself, rather than at cross roads or in a neighbouring village, as is customary in Ireland and elsewhere in Europe. The argument for such grouping of cottages is mainly a social one. It would tend to provide social intercourse among the labourers and their families, and to secure more privacy for the farmer's family. In Canada, however, as a rule social distinctions between farmers and farm labourers are not clearly marked. The labourer of to-day may be and frequently is the tenant farmer of five years from now, and the farm owner of ten years from now. We have not yet developed a farm labourer class. There is a decided economic advantage to the farmer in having his help close at hand, especially on a stock farm, and in having available the assistance of the labourer's wife either in boarding extra help or in helping with the work of the dairy. It is possible that the farm hand's wife, or even the farm hand himself, might have something to say in behalf of the cross-roads or village life, but on the whole the present arrangement of having the cottage on the farm itself in a little garden of its own would appear to be the more practicable, and also more in accordance with Canadian custom and sentiment.

Equally unanimous is the expression of opinion that the farmer's wife favours the separate cottage. One of the District Representatives, however, points out that frequently the farmer's wife is prepared, as a contribution to the success of the farm, at any rate until her husband gets on his feet financially, to submit to the work and inconvenience of boarding the hired man. It is really necessary

By courtesy of H. B. and L. A. Dunington Grubb.

British War Housing, Well Hall, Woolwich.

By courtesy of Mr. Thomas Adams.

British War Housing, Gretna.

for her to do so where the amount of winter work does not warrant the hiring of a man by the year, if economy of management is to have first consideration.

On the general question as to the effect of the provision of farm cottages on the supply of labour, the opinions expressed were not quite unanimous. Two of the correspondents made no statement on the point. Three were of the opinion that it did not improve the situation to any great extent. The rest, however, held an opposite view. Six said that they had no difficulty in securing competent help, having such cottages. Five stated that the provision of cottages was necessary, or the only satisfactory way to secure and hold good help, while eight put it more mildly, and said that cottages made it easier to secure help. The general opinion of the correspondents coincides with that expressed by the agricultural representatives, and by a good many other farmers consulted, that the provision of a farm labourer's cottage always aids in solving the labour problem, and is desirable wherever the farm can supply steady employment of a profitable character to a hired man.

The general conclusions reached are summed up as follows:

(1) That financial assistance should be available to farmers on terms similar to those obtaining in the case of lot owners in urban municipalities, except that where the security is ample, the Province may loan directly to the farmer acting through the District Representative of the Department of Agriculture.

(2) That plans and specifications not only of labourers' cottages but also of farm houses should be available at a nominal fee on application to the District Representative of the Department of Agriculture or to the Department itself.

(3) That an investigation should be made into the available sources from which a supply of the three classes of farm labour may be obtained, namely, (*a*) that hired by the year; (*b*) that hired for the summer months; (*c*) that hired by the day; and a policy of stimulating and regulating the supply of agricultural labour based on the result of such investigation, should be complementary to the encouragement of the building of houses to accommodate such labour.

Chapter VI.

TOWN PLANNING.

The town was originally a walled or fortified place, and owed its existence to the instinct of self-preservation. Wherever the group existed there existed also the need of a plan for safety. Hence town planning in ancient times involved an arrangement affording the maximum of safety in case of enemy attack. Dwellings were built as high as possible and were crowded together in narrow streets. Later, during the period of Greek, Macedonian and Roman expansion, colonial cities were founded and planned by imperial design, now with the object of military control, now for advantages of trade and commerce. Occasionally, also, town sites were chosen and developed because of particular local advantages in crossing a stream. To this need for thoroughfare, various towns which preserve the word "ford" in their names, as well as London and Paris, it is said, owe their origin. But whether the city was the outcome of the instinct of self-preservation, of the exigencies of empire and of war, or of the vagaries of a river, there was involved in its development a degree of town planning. The wall, the dwelling, the camp, the market and the road all had their place in this plan.

The middle ages showed progress in some matters, but little in the planning of its towns. The Renaissance, however, with its emphasis upon the beautiful, created a demand for the city not merely well defended, but also good to look upon. This desire found expression in England in the establishment of many squares. In London alone at the close of the Eighteenth century, approximately twenty-two of these open spaces had been planned and developed through the "ingenious combination of enterprise of ducal and other landowners and the speculative enterprise of various architects and builders associated with the work of the development of the estates in which the squares were formed."* Inspired by the example of London, Napoleon III created a new Paris far surpassing in boldness and in beauty of plan the actual achievements in London. The cities and towns of Europe vied with one another in an effort to imitate Paris, and boulevards, avenues, public buildings, and private palaces of wealth were planned to impress the traveller and to inspire in the citizen a just pride and patriotism. Berlin, Vienna, Buda-Pest, Brussels, Copenhagen, thus rose during the Nineteenth Century to the first rank among the attractively planned cities of the world. Display, however, failed at last to satisfy the awakening social conscience. It appealed to the dramatic instinct and, in most cities, created a standard of taste; it did not build in order that the people might have homes. Within a few hundred yards of the magnificence of Paris boulevards rose blocks of tenements where families were shamefully huddled together. The sunshine in the square and boulevard "is a quite inadequate substitute for the sunshine which should enter the home of the poorest workmen," to use the words of Mr. Aldridge, the English authority. While this is true, it is also the case that the best housing for the people cannot be secured without a proper town planning scheme, which takes into consideration open spaces among other things.

* Aldridge: The Case for Town Planning, p. 63.

The principles and scope of modern town planning can best be studied in the British Town Planning Act of 1909,* the most advanced legislation in town planning. The objects to be attained by a town planning scheme are summed up in the words of the Act, "proper sanitary conditions, amenity and convenience." In an adequate effort to secure these advantages, there must be from the outset intelligent control by municipality or other responsible authority of certain works both public and private, which are often either the object of spasmodic by-law restrictions or which more usually are left to develop as they may. To this end town planning concerns itself with: roads; buildings; open spaces both private and public; the preservation of objects of beauty or historical interest; transportation; drainage and sewage disposal; lighting; water supply; dealing with municipal land; power of entry and inspection of buildings; power of the municipality to remove, alter or demolish buildings which interfere with the carrying out of the plan; the height, character and density of buildings. But in all this the town planning scheme is not a group of arbitrary restrictions imposed to hamper growth, but the assurance of rational growth. It is the establishing of a due proportion having regard to the physical and social needs of the community. It is simply a pattern to be filled in according to a plan the general outlines of which have been carefully conceived.

No change contrary to the general lines of the plan may be carried out. The details are not to be filled in until such action is deemed wise by the municipality. The fact that a certain area is "under town planning care" to be subdivided and otherwise developed in the future, as required, does not in any sense hamper or urge the municipality before the time for such development is ripe. "In short," says Mr. Aldridge, "a town planning scheme governs the future development of the area for which it has been prepared. But the extent to which it governs the development depends not on any general powers, but on the actual provisions of the scheme itself. Moreover, if the scheme does not contain any provisions in regard to certain points, and if these are not dealt with in the ordinary Bye-laws operative in the area of the Local Authority, then the land-owner, the land developer and the builder will be in the same position under a Town Planning scheme as they are in any other area for which a Town Planning scheme has not been prepared."† In fact, the builder is in a better position in that the character of the district in which he is building has been definitely determined, and consequently the value of his property has been stabilized.

Referring to the place housing occupies in town planning, Mr. John Nolen, the American town planner, says: "The most important features of city planning are not the public buildings, not the railroad approaches, not even the parks and playgrounds. They are the location of streets, the establishment of block lines, the subdivision of property into lots, the regulations of buildings and the housing of the people."‡ Experts may differ as to the degree of importance they would attach to other aspects of town planning, but with all British and recent American authorities housing has first consideration.

Of the objects of town planning, convenience may be considered first, since all urban development is governed by the necessity of getting from one place to another with the least possible trouble and confusion. The disadvantage of adhering rigidly to a checkerboard or gridiron plan of laying out streets is obvious. Even where the ground is level convenience is sacrificed. The simple truth that any two sides of a

* See Appendix II, Memorandum by Mr. Thomas Adams on Housing and Town Planning in Great Britain.

† The Case for Town Planning, p. 193.

‡ Charles Mulford Robinson, City Planning, p. 6.

triangle are greater than the third is disregarded. Citizens each day in going to and from work squander time which might be devoted to the useful occupations of labour or leisure if main arteries of traffic were constructed diagonally. But where steep hills are encountered the gridiron plan is even more open to objection. Expensive cuts and fills must be made where an easy and natural grade could be chosen. The argument is not here based on aesthetic grounds; irregular and curved streets are not advocated simply because of the charm of irregularity, but because they may afford more natural and convenient means of communication.

Equally questionable is a policy of standardizing the width of streets. The factors which determine the width of streets are the demands of traffic and the necessity of light and air. The busy thoroughfare down town and the quiet street in a residential area cannot be measured by the same standard. In the latter it is

By courtesy of Mr. Thomas Adams.

Illustrating the effect of a uniform system of straight roads as necessitating expensive cuts and fills.

necessary to have the houses separated by a considerable distance to secure the circulation of air and to provide a desirable measure of privacy, but it is by no means necessary to saddle the householder with the expense of wide pavements and sidewalks. We are much too lavish of cement in many of our residential streets. Grass is more attractive and less expensive, and besides requires no storm sewers to carry off the rain. The number of houses served by narrow gravel roadways, as for example Clarendon Crescent in Toronto, could be greatly increased with advantage to the attractiveness and economical administration of our cities.

On the other hand, main thoroughfares should be of a greater width than the sixty-six feet imposed by the surveyor's chain. It is often a difficult matter to determine the future of streets. Spadina Avenue in Toronto and Collier Street in Barrie may be noted as examples of streets which missed the fate marked out for

them. The citizens of Toronto can regret the unwisdom of a plan which gave Spadina Avenue a width of 132 feet, and left Yonge Street at 66 feet. In the very valuable report of the committee appointed by the President of the Local Government Board and the Secretary for Scotland, with Sir John Tudor Walters, M.P., as Chairman, to consider questions of building construction in connection with the provision of dwellings for the working classes in England and Wales, and Scotland, and report upon methods of securing economy and despatch in the provision of such dwellings, an interesting illustration is given of two arrangements of the same area. One arrangement definitely secures that through traffic routes will not follow minor roads, while the other arrangement leaves other roads than arterial roads equally likely to become through traffic routes.*

Failure accurately to forecast the lines along which cities are to develop will always leave to posterity a legacy of expense. It is estimated that in fifty years as much as $25,000,000 has been spent on the widening of streets in England, while the sums spent in American cities, many of them comparatively new, are very large. It should be noted that the enhanced value given to adjacent property by street widening, if taken by the municipality as it should be, will frequently measurably reduce or even more than cancel the expense incurred. While mistakes in estimating the extent and character of a city's development are to be expected, it may yet be stated that foresight and expert knowledge if applied to the study and regulation of the growth of our cities would have served to avoid many egregious and costly blunders.

The modern tendency of the American continent to build skyscrapers seriously adds to the inconvenience of city dwellers. Congestion in transportation during the busy hours of the day is inevitable, even when recourse is had to expensive underground and overhead railways. Such buildings also serve to deprive the occupants of their lower floors of natural light, to offend the artistic by their skyline, and unduly to enhance the land values in the vicinity. Their only advantage is in the facilitating of business by bringing those having common interests close together. Good city planning suggests that no building shall be higher than one and a half times the width of the street.

A marked tendency has developed in both Europe and America in the direction of the decentralization of industrial population. Factories have sprung up in smaller cities and towns or in the suburbs of large cities along the lines of railway. These new developments have this advantage that they give better facilities for proper town planning. Already in Ontario two very attractive developments in respect of town planning have been begun at Brantford and Hawkesbury, respectively. In both of these new industrial housing schemes the workman lives within walking distance of the factory and has sufficient space about his house for lawn and garden. The dreary uniformity which is unfortunately the rule even in our latest surveys has made way for a varied arrangement of streets which in itself suggests relief from the monotony of toil in the factory. It is to be expected that the next few years will see a rapidly increasing number of companies realizing the economic as well as social advantages of scientific town planning in the housing of employees.

The necessity not only of wise regulations but of strict enforcement of these regulations is nowhere more important than in town planning. Under a zoning by-law the character and the density of the buildings appropriate for different parts of the city are determined. At the present time these important factors too often are

* Report of Committee, 1918, p. 16.

left to the caprice of the subdivider, whose main object frequently is to have as many feet of frontage as possible, or to that of the purchaser of a lot whose concern may be to bring the greatest return from his investment regardless of the effect on neighbouring property. But even under a policy which provides that each development shall conform in character to certain general principles of town planning which have been laid down, constant vigilance must be exercised if abuses are to be avoided. An unsightly garage, an addition to the front of a house, or the crowding in of an additional house may destroy the appearance of a street and seriously impair the community pride.

Zoning has an additional advantage in that it tends to stabilize land values. The element of uncertainty which retards the improvement of property and invites

By courtesy of H. B. and L. A. Dunington Grubb.

The Garden Village of the Dominion Steel Products Company, Brantford, Ontario.

speculation is eliminated. Factories are assigned to certain areas which are determined by experts to be best suited to manufacturing; other areas are set aside for business, wholesale and retail, and still others for residential purposes. Where this is done property owners feel a confidence in maintaining improvements which is otherwise wanting. In this connection Mr. Frank Backus Williams says:

"Cases will occur to all of you where a single factory has invaded a residence street for some more or less accidental reason, and no others have seen any advantage in following. A slump in land values has been the result because the locality was no longer pleasant or healthful to live in, and houses have been put to uses to which they were ill adapted, or changed over, or left vacant to the loss of the owners and the community. This is one of the commonest causes of slums."*

* Proceedings of the National Housing Association, 1916, p. 319.

It is not that factories are of necessity unsightly, but that generally they are not suitable neighbours for houses. Many manufacturers, whether recognizing the commercial value of amenity, or from natural good taste, have transformed their factories by vine-clad walls, window gardens, lawns and recreation grounds. Mr. Aldridge thus describes those who have not yet learned to associate industry and amenity:

"Most of them [are] of an older generation, who think that a district of hard work must be of necessity a grimy and gloomy district. Smoke and grime has become familiar and even dear to them as the scene of fortune building, and they are inclined to regard as impracticable attempts to introduce any large measure of amenity into the working places of the world, . . . but they are quite honest and sincere in their beliefs—or, to be more correct, in their prejudices—just as the old Puritans were sincere in their insistence on gloominess as a sign of righteousness."*

Leaving ample allowance for streets and open spaces, twelve houses to the gross acre would permit lots of 2,500 square feet. In comparison it is interesting to note that the Federal standards suggest a minimum lot of 1,800 square feet in cities and towns, and of 4,500 square feet in villages. It should be added that it is an essential feature of proper planning that the provision of space for parks and playgrounds is not overlooked in the desire to secure large individual lots. Indeed, a considerable number of people do not appreciate having a garden for vegetables, and a good development in determining the size of the lots will take this fact into consideration.

The value of trees as an ornament to the streets and parks of our cities is not yet sufficiently recognized. The charm of Tecumseh Park in Chatham, a civic playground within a minute's walk of the main street of the city, is due largely to the circle of maples which surrounds it, and the attractiveness of Queen's Park, Toronto, is due to its simplicity and the stately oaks. Tree planting, happily, is a regular practice on the streets of our urban municipalities, and also on a good many country roads. But flagrant disregard of the value of the tree is too often encountered. A splendid elm which gives character to a whole street, for example, is killed by piling earth about its trunk in grading the street for pavement, or a whole row of maples is left in lop-sided deformity to make way for electric wires. Every natural feature of beauty should be sedulously preserved, and improved by the harmonious addition of the artificial.

It is unfortunately the case that mistakes in town planning are much more difficult to remedy than to avoid. A town like Port Hope, for example, with great natural possibilities for attractive development, will be hampered for all time because two of its railways monopolize the water front and because natural contours have not been regarded in laying out the streets. The single fact that it is most convenient for railways to maintain an even grade by following the water level of rivers and lakes is responsible for much that is open to criticism in the lay-out of our towns and cities. Once the direction and width of the streets is determined, alterations are difficult and expensive. In Ontario, however, our urban development is still in its early stages, where the application of expert knowledge and foresight would insure posterity against serious disadvantages.

The Ontario Housing Committee contemplated the illustration of the relation which exists between housing and transportation, and of the possibilities of wise regulation of development. It was thought that a town planning survey of Toronto on the one hand, and of the triangle between Niagara Falls, Welland and St. Catharines on the other hand, would afford an idea of what may be done to secure

* The Case for Town Planning, p. 27.

the building of the right type of dwellings in larger and smaller centres, at the most suitable place in relation to the industries, and to the rural districts from which food supplies are secured. Interesting and valuable as such a survey might prove in an analysis of the housing problem in Ontario, it was not possible to conclude it without delaying the publishing of this report. The general statement however may be made without hesitation that adequate means of transportation should accompany or precede the subdivision of land into building lots and actual building operations, as is the tendency in Europe and the United States, and not follow, often after the lapse of years, as has been the case elsewhere in Ontario and particularly in Toronto.

The question as to whether town-planning should be compulsory is one that should be considered. In the chapter on Rural Housing certain recommendations looking in this direction are made in respect of new developments in rural areas

By courtesy of H. B. and L. A. Dunington Grubb.

British War Housing, Roe Green. In planning the development Sir Frank Baines preserved the trees in dominating positions.

adjacent to cities and towns. It is there pointed out that if extravagant expenditure and unsatisfactory living conditions are to be avoided, greater oversight must be exercised over suburban subdivision of land. It is equally in the public interest that means should be taken to regulate unhealthy or abnormal development within the present limits of our cities and towns. Sweden was the pioneer in the movement for compulsory town planning, and introduced a compulsory law in 1874. Italy has made town planning compulsory for all urban communities of more than 10,000 people. France has recently passed a law requiring every town or village in that country, whether within the war zone or not, to lay out its future development according to the principles of modern city planning. To enforce this there will be a federal commission, with a general commission in each of the departments, and under these general commissioners, community commissioners to direct local work.

Great Britain has hesitated to introduce compulsion into this as into other matters, but writing in 1913, Mr. Aldridge states: "Despite the fact that the Act of 1909 has only been on the Statute Book for five years, it is already clear that the harmonious and careful development of rapidly growing urban areas can only be secured by making the preparation of Town Planning Schemes obligatory on all the Local Authorities within these areas."* It may be regarded as certain that the 300,000 or more houses which are to be built in the period of reconstruction will be placed with full regard to the basic principles of town planning, namely, convenience, health and amenity.

In the United States the need of city planning has received universal recognition. In more than two hundred established cities progress in city planning has been reported. Where comprehensive schemes have been carried out, as for example, in Chicago and Cleveland, large expenditures have been regarded as justified by the results, economic as well as aesthetic. Town planning experts were assigned to all the developments financed by the federal government during the war, and these worked in association with architects and engineers. The State of Massachusetts has perhaps the most advanced legislation on the subject of any state in the union, a circumstance which may result from the fact that in Boston it has a conspicuous example of evils which develop in default of such legislation. In 1913 it was enacted that every city of the state and every town having a population of more than ten thousand was authorized and directed to create a town planning board "to make careful studies of the resources, possibilities and needs of the city or town, particularly with respect to conditions which may be injurious to the public health or otherwise injurious in and about rented dwellings, and to make plans for the development of the municipality with special reference to the proper housing of its people."†

It is thus coming to be recognized in America as in Europe that it is the part of prudence to secure healthy urban development by wise and adequate provision for town planning, rather than to invite the difficulty and expense of remedial measures.

It is therefore recommended:

1. That the Provincial Government provide an advisory staff of experts whose duty it will be to assist municipalities entering upon town planning schemes, and to ensure the adequate carrying out of such schemes.

2. That a town planning educational campaign through the press, moving picture theatres and literature issued by the department for distribution in the municipalities be inaugurated by the Provincial department of town planning.

3. That co-operation be sought between the town planning department and the Department of Education to the end that in our schools the case for town planning in its essentials may be incorporated in the present study of civics, in order that our young people may realize the relation between town planning and good citizenship; and that the universities of the Province establish courses of study for the training of men and women as experts in municipal affairs, said courses to include sanitation and public health, assessment valuation, engineering, surveying, municipal accounting, civic transportation, architecture, industrial organization and general town planning.

4. That within a fixed period of time, town planning be made obligatory for all urban municipalities in the Province.

* The Case for Town Planning, p. 451.
† First Annual Report of the Massachusetts City Planning Board, 1915, p. 18.

Chapter VII.

WHAT CONSTITUTES A HOUSE.

With the appropriation by the Ontario Government in July, 1918, of two million dollars for housing, and that of twenty-five million dollars by the Federal Government, in the following December, it became necessary to determine the type of house to the building of which the State should lend its aid.

What constitutes a desirable house? By what standards do we measure desirability? A standard has been defined as that which has been established by investigation and authority as a reasonably attainable maximum of desirability. Some standards are fixed; some are constantly changing.

There must, however, be some definite classification taken as a basis in formulating standards. Careful investigation of living conditions has established certain requirements as essential, and others as desirable. There will undoubtedly be some criticism of any attempt to classify essentials and there is bound to be a diversity of opinion, but for our purpose the *essential* features may be summarized as follows:

1. Sufficient land to give each family privacy and plenty of air.
2. Water tight floors, walls and roof.
3. One, or more, rooms for cooking, eating and general day use.
4. Bedroom for parents' use.
5. Bedroom for male children.
6. Bedroom for female children.
7. Provision for toilet with sanitary water closet and sewer connection.
8. Running water supply fit for drinking.
9. Kitchen sink with waste connection to sewer.
10. Uninterrupted daylight and ventilation through windows in every room.

Additional features which are so desirable as to be almost essential are:—

1. Bath tub and lavatory, with hot and cold water supply.
2. Laundry tub with hot and cold water supply.
3. Direct sunlight in all principal rooms.
4. A second room, in addition to that used for cooking.
5. Clothes closets.
6. Porches and verandahs.

Further additions of desirable features would include:—

1. Electric light.
2. A separate dining-room.
3. A cellar.
4. Furnace for heating.

Some comment may arise on the omission of cellars from the list of essentials. There are those who claim that a cellar is essential for the storage of fuel, canned

fruit, vegetables, etc., and that since foundation walls are necessary, it costs no more to provide a cellar than to omit it. This latter question will be considered along with the other items entering into house construction. Regarding the storage of fuel, etc., a careful survey of conditions will disclose the fact that with many families the income will not provide sufficient surplus to permit the purchase of fuel, vegetables or fruits, in sufficiently large quantities, to require a cellar for storage. On the other hand, where cellars are provided they will frequently be found to contain a miscellaneous assortment of insanitary rubbish, which constitutes a serious fire menace.

In the commercially built dwelling of the past, the mistake has been made of providing too many, and frequently, too small rooms. Sufficient attention has not been paid to the use of rooms provided and their place in relation to one another. The average workman does not need many rooms. His wife does not wish to add to her duties by caring for more rooms than are needed. A man's dwelling is governed by his earning capacity, just as his clothes, food, or any other commodity; but there is a limit beyond which we cannot go and maintain decent living standards.

Recognition of these facts and a careful study of the actual requirements suggest that houses ranging from four to six rooms are best suited to the needs of the average workman. Of these the five-room type, containing three bedrooms, should predominate. The four-room type, providing only two bedrooms, is suited only to a workman without family, or to one with a small family. One of the most important on the list of essential items is the provision of a bedroom for parents, and a separate bedroom for children of each sex. This in many cases requires a minimum of three bedrooms, and is the reason for the greater need of five-room houses. If more than six rooms are provided the tendency is to make up the additional expense by sub-letting to roomers, usually with injurious effect to home life.

The list of essentials and desirable features given above, together with the considerations enumerated, have determined the following standards.

STANDARDS

These standards represent minimum requirements for safety, health, comfort and convenience in industrial houses.

It should be possible to exceed in most cases the minimum stated both in the size of rooms and in the size of lots. It is suggested that in new developments Ontario may aim at least to equal the new English standard of twelve houses to the gross acre in urban centres and eight houses to the gross acre in less populous districts.

Grouping.

It is recommended that a space of at least twelve feet be preserved between houses or groups of houses in all new developments; also in the case of houses with side windows, other than those from stairs, halls or pantries. However, where the size of lots is fixed, or where existing buildings interfere, a narrower space may be unavoidable, but such passage should be at least four feet wide, without windows other than those from stairs, halls or pantries. Houses of frame construction, in whole or in part, should have a space of at least fifteen feet between them.

Duplex houses or cottage flats are recommended only as a substitute for tenements. They should not be more than two storeys in height, and not more than

three rooms in depth, except the end house of a duplex group, which may be four rooms in depth.

Open Spaces.

The rear of the house should be at least fifty feet from the rear of the lot. In new developments the front wall of the house, projecting steps or verandah should not be nearer than twenty feet to the street pavement or roadway.

Space for gardens is desirable, also play space for children. Local conditions will determine whether there should be individual or community allotments and playgrounds. Access to the rear should be provided; in the case of group houses service lanes are desirable. These should be paved, drained, lighted, and not less than twelve feet in width. Four-foot passage ways between buildings should be paved.

Outbuildings are not desirable.

Fences.

Open fences or hedges are recommended. Close board fences are not acceptable.

Size of Houses.

Minimum number of rooms, four, exclusive of bathroom and kitchenette.

Arrangement of Rooms.

No house should be more than two rooms deep unless it has at least twelve feet of clear space between it and the next building, in which case detached, semi-detached and group houses may be three rooms deep, and duplex houses may have a depth of four rooms.

Types of Houses.

Four-room type: Living room, kitchen, 2 bedrooms and bathroom, or living room, dining room-kitchenette, 2 bedrooms and bathroom.

Five-room type: Living room, dining room-kitchenette, or kitchen, and 3 bedrooms and bathroom.

Six-room type: Living room, dining room, kitchen, 3 bedrooms and bathroom.

Minimum Size of Rooms.

Living Room	144 sq. ft.	narrowest	dimension	11 ft.
Dining Room	120 "	"	"	10 "
Kitchen	80 "	"	"	8 "
Kitchenette	50 "	"	"	6 "
Bedroom No. 1	120 "	"	"	9 "
Bedroom No. 2	100 "	"	"	9 "
Bedroom No. 3	75 "	"	"	8 "
Bathroom	35 "	"	"	5 "

Where the kitchenette opens from the dining room with a doorway of six feet, the minimum combined width of dining room and kitchenette including the intervening partition may be fifteen feet.

Clothes Closets.

Clothes closets to be provided for every bedroom, in addition to the areas specified, the closet to be not less than 22 inches deep, to be fitted with rod for coat hangers, and to have a door at least two feet in width.

Ceilings.

Minimum height of ceilings—8 feet.

Sloping ceiling will be acceptable only under the following conditions: Roof space above that portion of ceiling to be of ample size, preferably ventilated; space between rafters of sloping portion to be adequately ventilated into roof space; bedroom to have greater window area and better ventilation than the minimum permissible for a standard flat-ceiling room; bedrooms to have a minimum height of 8 feet over an area of at least 40 square feet, with a minimum flat ceiling width of 3½ feet, and a clear height of not less than 6 feet over an area of at least 75 square feet with a minimum width of 7 feet.

Furniture Space.

Beds to be indicated to scale on plans (double beds 5 feet by 6 feet 6 inches; single beds, 3 feet by 6 feet 6 inches). Location of beds not to interfere with windows or doors. It is recommended that beds be free standing and not located in a corner or with the side against a wall. Space to be provided for two pieces of furniture in addition to bed. To allow moving of furniture, doors to be not less than 2 feet 6 inches in width.

Stairs.

Risers to be not more than 8 inches high, and treads to be not less than 9 inches wide. Winding stairs to be accepted. Treads to measure at least 9 inches wide, 18 inches from rail. Two winders, and not more than two, are required in a right-angle turn.

To allow for moving of furniture, stairs shall be not less than 2 feet 9 inches in clear width.

Cellars.

No living quarters to be in basement or cellar except where the land has a decided slope.

Cellar to be lighted by at least one window opening directly to the outer air and to be provided with another opening located so as to provide cross ventilation.

Cellars or basements to have a clear height of 6 feet 6 inches.

The walls and floors to be damp-proofed or water-proofed, as conditions may require. Where conditions require waterproofing, weeping tiles to be placed around the footings and graded to follow the natural flow of the ground water.

Floors to be of concrete, with cement finish, graded to drain to be connected with the sewer.

Where the cellar is omitted, foundations may consist of either continuous masonry wall, or masonry piers two feet from finished grade to first floor. The space under the house to be drained, enclosed and ventilated.

Light and Ventilation.

Windows may be double-hung, pivoted or casement. If double-hung upper and lower sash to be the same size, and both to be moveable.

Every room to have at least one window opening directly to the outer air. One window is sufficient in small bedrooms, but more than one is desirable in other rooms. Each room to have a window area of not less than 12 square feet. Minimum window area to be measured between stop beads. Window head to be as near ceiling as practicable.

Cross ventilation, as direct as possible, to be provided for all rooms through windows, transoms, or doors.

Every bathroom to have a window of not less than 6 square feet in an area opening directly to the outer air.

Every water-closet compartment to have a window of not less than 4½ square feet in area opening directly to the outer air. A skylight in the roof with an equal amount of glass area and provided with adequate ventilation will be accepted in lieu of such window, but skylights are not desirable.

Plumbing.

Bath-tub to be a one-piece fixture; shower not sufficient.

Sink to be in one piece, preferably of enamelled iron with integral back; rim to be 36 inches above the floor.

Wash tubs to be in kitchen or cellar. When placed in kitchen, an enamelled iron one-piece combination sink and tub is recommended. When placed in cellar, two tubs are recommended, to be of enamelled iron, preferably, or of cement. Rim to be 36 inches above the floor.

Water closet to be inside the house in bathroom or in well-lighted and ventilated compartment (not in cellar) opening upon hall or passage way. Fixture to be of porcelain, of the siphon, or siphon-jet type, to have a large water-way, and to be provided with an individual flush tank.

House drain to run from bottom of soil stack to a point 3 feet outside the wall of the building, to be medium weight cast iron pipe, of a minimum size of 4 inches. Soil pipe to be of cast iron standard weight, minimum size of 4 inches, and to be extended through the roof for a distance of at least 3 feet.

Hot and cold water to be provided to sinks, laundry tubs, baths, and lavatories.

All fixtures to be provided with proper drains.

All fixtures to be separately trapped, except in batteries of laundry tubs and combined sink and laundry tub, where one trap is sufficient.

Venting of traps to conform to approved practice, except that the back venting of the top or only fixture on a line is not required. Sink and lavatory traps to be connected direct to the vertical wastes, and not to floor branches. Exposed pipes preferred; where possible lines to be concentrated, and kept from outside walls.

Heating.

Where furnaces are not provided rooms to be arranged and chimneys located so that stoves may be conveniently placed. The bathroom to be adequately heated. The kitchen flue to be of sufficient size to permit the use of a coal range for cooking, and to be lined with tile flue lining, or parged.

Lighting.

Electric light is preferable.

Materials.

Brick, hollow tile, stone or concrete preferable.

Wooden frame with exterior walls of stucco, shingles or clapboard acceptable for detached or semi-detached houses.

Wooden frame with exterior walls of stucco acceptable for group houses.

Outer walls to be insulated against dampness and condensation. Rat nogging to be provided.

Division walls to be of brick, hollow tile or concrete.

Adhering to the standards outlined above, it will be found that sixteen feet is the narrowest frontage upon which the smallest house, namely, a 4-room group house can be built.

It must not be forgotten that endless rows of houses, looking out only upon streets and back gardens, are not really homes. No matter how conveniently the individual houses may be planned, how permanently constructed they may be, how completely they may be equipped with sanitary conveniences, or how attractive may be their appearance, there is still needed the touch of what, for lack of a more comprehensive term, we may call "Art." Art has been defined as "the well doing of what needs doing."

When we have provided all of the above, to quote from the eminent English Town Planner, Mr. Raymond Unwin: "We have in a certain niggardly way done what needed doing, but much that we have done has lacked the insight of imagination and the generosity of treatment which would constitute the work well done, and it is from this well doing that beauty springs. . . . We shall need to secure still more open ground, air space, and sunlight for each dwelling; we shall need to make proper provision for parks and playgrounds; to control our streets; to plan their direction, their width, and their character, so that they may, in the best possible way, minister to the convenience of the community."

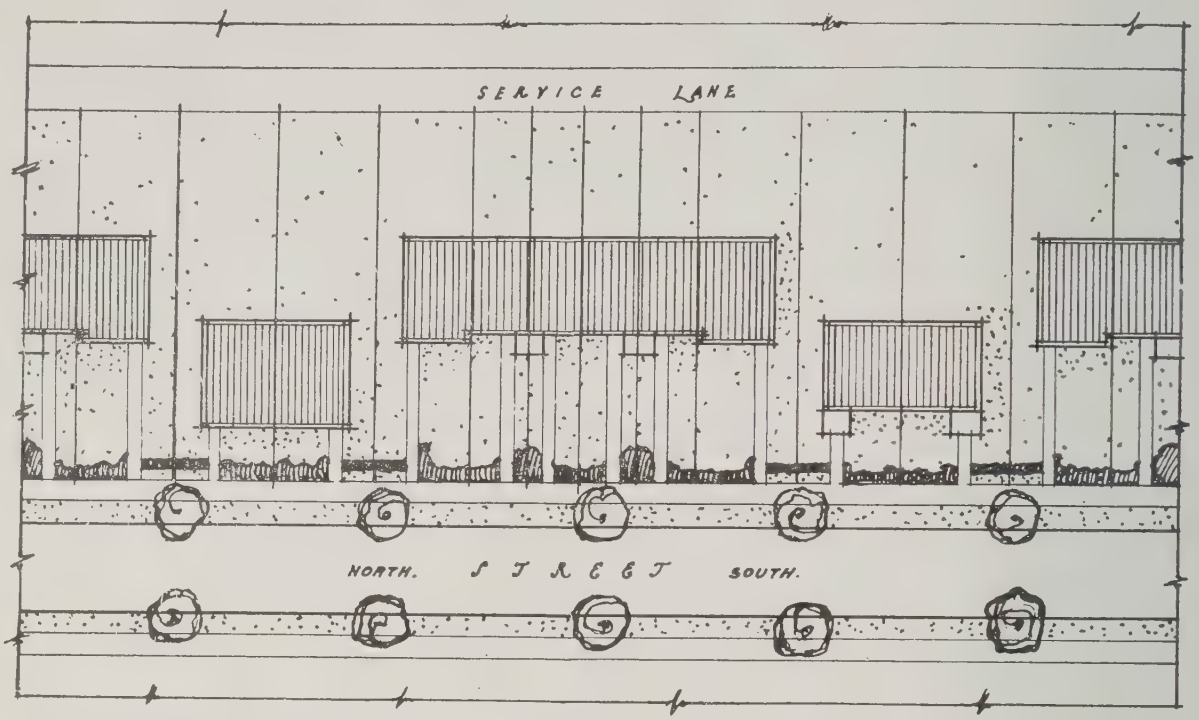
Provision having been made for this, many of the resulting benefits may still be lost if houses are planned and placed without due consideration being given to the sun's travel. It is very desirable that all rooms should have direct sunlight during some portion of the day. If group houses, two rooms in depth, are placed on streets running east and west, the north room will of course be devoid of direct sunlight. This can be avoided—first, by planning houses only one room in depth; second, by placing houses at right angles to the street, so that rooms will have an east and west exposure. (See drawing No. 10, p. 94.)

The first solution will, in many cases, be found impossible, owing to the extensive street frontage required, and in many instances the second solution may be difficult to carry out, especially where individual groups, which do not form part of the development, are being constructed.

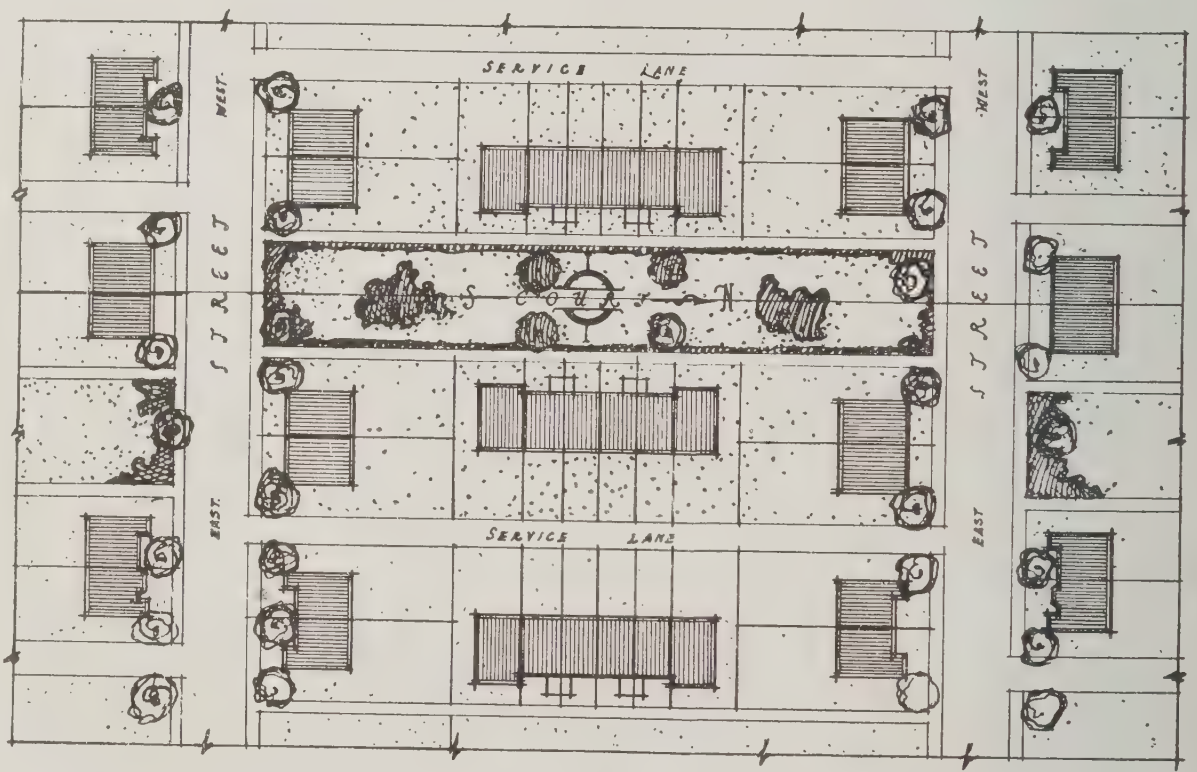
This difficulty is not encountered when houses naturally face east and west, and it becomes apparent how very important it is in laying out sites to place and group the houses so as to get the best results from each site. Care, however, should be taken to avoid monotonous regularity of frontage. This can be avoided by variation in exterior treatment of the houses themselves, and frequent breaking of the building lines. (See drawing No. 10, p. 94.)

It is not sufficient merely to consider the placing of houses in relation to frontage lines so as to insure sunlight. The spaces behind buildings must not be forgotten. There is nothing which more thoroughly expresses civic spirit and the community attitude towards housing and town planning than the treatment of spaces at the back of buildings. Unfortunately, it seems to be forgotten too frequently that the outlook from many houses must be on the backs of houses opposite, and since these are not seen from the street, nor by the public generally, too often no attempt is made to make the rears even presentable. By limiting houses in groups to two rooms in depth, and detached and semi-detached to three rooms, deep courts will be eliminated, and by exercising a little care in arrangement and design, the rear can be made as attractive as the front.

The group house has never been properly developed in Canada and, consequently, is not understood or appreciated. Canadians, therefore, have a strong pre-



SUGGESTION FOR GROUPING ON NORTH & SOUTH STREETS



SUGGESTION FOR GROUPING ON EAST & WEST STREETS

ference for a detached house, even though it is separated only by a few feet from its neighbour.

In sections where standards of living are high, the advantage of a side entrance may outweigh the objections to the resulting long, narrow passages which are cut off from direct sunlight and are frequently closed at the eave-line by overhanging roofs. Nevertheless, it is maintained that unless there is ample space between houses, the advantage lies with the group house.

Unless widely spaced, detached houses having windows in side walls give less privacy than group houses with windows only in front and rear. Properly constructed party walls are practically sound-proof, and, in regard to privacy, it is more important to be shielded from view than from sound. The minimum space recommended is twelve feet, but more is desirable. Air space between houses is of no value for ventilation unless windows overlook the space. Unless, therefore, that space is sufficient to secure privacy, the advantage is doubtful. The same argument applies to the lighting of rooms. Space between houses is of doubtful value for lighting, unless of sufficient width to insure direct sunlight. These are all items which it is difficult to estimate in money value. Considered merely from the standpoint of cost, the group house has much to commend it, especially where, as in this discussion, inexpensive houses only are being considered. It is generally accepted that to insure a net return of six per cent. on money invested, the gross revenue must be at least ten per cent. This means that for every one hundred dollars spent, the tenant pays eighty-five cents a month rental. In building group houses, one exterior wall per dwelling is saved. Considering the smaller type of house (four rooms) this wall means an approximate saving of three hundred dollars, or two dollars and fifty cents per month in rental. The greater cost of land must also be considered, together with additional side-walk, road and sewer charges. Over against this, however, must be set the cost of paving and lighting the rear lanes, which with group houses become necessary. The saving in fuel, through reduced wall exposure, is also a consideration, especially in view of threatened fuel shortage, a condition which is not entirely due to abnormal conditions caused by the war. These considerations will be more fully discussed under an analysis of construction and relative costs.

Generations of city life undoubtedly have developed a class of people who prefer to live in the heart of a city; people to whom green fields and gardens mean little. Their housing problem is more difficult, since high land values reduce the amount of land available for the house.

The tenement at its best has always proven unsatisfactory, and although it may be a necessary evil in larger cities such as London or New York, there can be no excuse for it in Canada. The duplex group house, because of reduced frontage per family and simplified plumbing, offers a solution, less desirable, it is true, than the self-contained group house, but vastly preferable to the tenement. Duplex houses, however, need careful planning, both in regard to the arrangement of rooms within individual apartments, and the grouping of these apartments, if desirable living conditions are to be encouraged.

In all housing work it must be remembered that the children of to-day are the citizens of to-morrow. Their need of air and play space should always be considered.

A suggestion for a duplex development is included among the drawings submitted. The exercise of care, however, is needed in permitting the erection of such houses. High land values resulting from congestion form the only acceptable excuse.

English planning for inexpensive houses will be found unsuited for Canadian manners of living, especially as regards the practice of locating a bath tub in the scullery, or room used for cooking. Generally it will be necessary to place the water closet, lavatory and the bath tub together. There are many good arguments in favour of placing the water closet in a separate compartment, but in most cases space will not permit of this, nor is it possible to have two compartments and at the same time have windows with direct access to the outer air—a requirement rightly insisted upon by Medical Health Departments.

In regard to living rooms, there is little real objection to a kitchen-dining room if a second room is provided for general use. In fact, from the house-wife's point of view, the arguments are entirely in favour of the combination, provided the room is of sufficient size. The ideal arrangement would seem to be a combination providing a kitchen alcove, or kitchenette, opening directly into the kitchen proper or dining-room—the name by which it is called matters little. The kitchenette would accommodate such apparatus as combination sink and laundry tub, stove, hot water boiler and working cabinet, which contains space for cooking utensils.

Shall the second room be a parlour or general living room? This depends upon the use and furnishing of the room. The term "parlour" always conveys a sense of formality, and where the house plan demands that the room be used as a thoroughfare, the idea of a formal room must be abandoned. There undoubtedly exists among many people a strong liking for formality and for the "parlour" of our grandfathers; and, while the use of the front room must be determined by the occupant, it will however generally be found inadvisable in a small house to withdraw one room from general use.

The workman's home is essentially a house where all the household duties fall upon the shoulders of one woman. It is therefore important that the relation of rooms to one another, and conveniences within the rooms, should be planned to lighten those duties. Among such conveniences the bath-room may be included. Three bedrooms have already been suggested as a minimum, except for the smallest type of house. It will be found, however, that to provide three bedrooms, bath-room, closets, and necessary hall space on an upper floor, the first floor will be unduly increased in area, and consequently will constitute an extra, unwarranted charge upon the tenant. It is suggested that in some cases the bath-room may be placed on the first floor with a saving of expense and work, and generally with advantage, provided the arrangement of rooms and stairs is such that privacy is not sacrificed. The workman's wife, with a family of small children, will appreciate the saving in steps which such an arrangement will insure. In addition, there is the equally important saving in cost, due to simplified plumbing and the ease with which a bathroom may be heated. This suggestion has been developed in plans submitted.

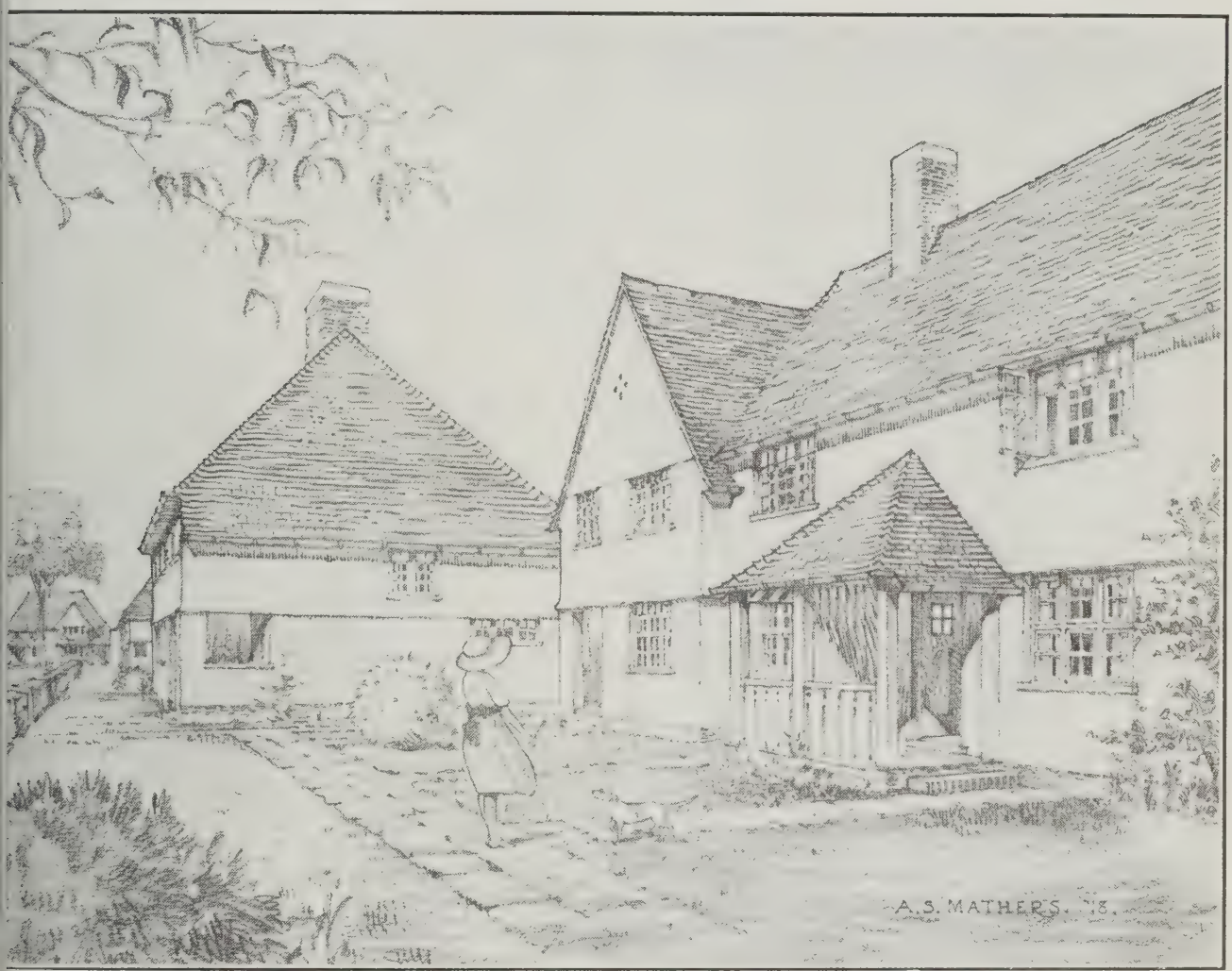
The kitchen is a workroom and should be planned for comfort and convenience in handling work. For a few hours a day direct sunlight is desirable, but sunlight during a long period, especially in summer, renders the kitchen almost uninhabitable. Good ventilation is extremely important. This can best be provided by means of openings on two sides of the room, but frequently in small houses it is not possible to provide such openings. In this case ventilation may be greatly aided by using the kitchen flue as a ventilating flue, if cooking is done by gas. When a coal range is used, a separate flue will be found necessary.

Where expense need not be considered there is a wide range of floor materials for the kitchen. It is extremely doubtful, however, if anything can be found which

will give more satisfactory results than a good quality linoleum upon a reasonably well finished wood floor.

Wall paper is not recommended for kitchen walls. Where the money available will permit, an oil paint will give a very satisfactory washable finish. The least expensive wall finish is cold water paint, which, if renewed often enough, will be perfectly satisfactory.

The enamelled iron sink is the most practical choice. The selection should, however, be confined to the product of a favourably known manufacturer. Frequently, in the more cheaply made products, the finish will rapidly disappear under the action of cleaning powders. The height of the sink is most important.



Illustrating portion of Six Family Group G-1, and Semi-Detached House S-D-1.

In practically every kitchen and laundry to-day these fixtures are placed too low, resulting in frequent backache. For a woman of average height, a height of 36 inches from floor to rim will be found none too great.

Kitchen cabinets, combining storage accommodation for everyday cooking needs, with a good working top, have become established as an efficient aid to housekeeping. Many of these do not provide the accommodation necessary in the smaller houses where pantries and storage closets, owing to lack of space, frequently cannot be obtained. Drawing No. 9 illustrates suggestions which have been found satisfactory.

There can be no questions as to the desirability of clothes closets. Houses in which these are omitted are justly criticised. A clothes closet which is too narrow or too shallow to permit of orderly hanging of clothes is worse than none

at all. The standards accordingly suggest a minimum width which good practice has established. In addition to clothes closets for each bedroom, all houses should provide space for storing bedroom linen, towels, etc. A coat closet on the first floor is a further convenience which should be included in a house plan where space will permit.

In planning inexpensive houses, if a single house is considered, the nearer it approaches a square the greater the economy. As the plan changes from square to oblong, the ratio of wall area to floor space increases, and with it, the cost. Any departure from the right angles means increased labour and waste of materials in

Illustrating Semi-Detached, S-D-2.

cutting. Furthermore, in determining the general lines of the building, standard sizes and lengths of available materials should be considered. Floor joists are obtainable in lengths of 10 ft. 0 in.-14 ft. 0 in., etc. Why not then consider these units in planning? A room planned for a clear inside dimension of 11 ft. 0 in. can be spanned by a 12 ft. 0 in. joist, without an inch of waste. Increase the dimensions to 12 ft. 0 in. and a 14 ft. 0 in. joist is required, incurring a waste of 1 ft. 0 in. Multiply the waste by the number of joists required in the building, continue the waste throughout a thousand buildings, and the total amount wasted will go far toward building several houses.

The same economy can be studied in the placing and design of door and window openings. There are many instances where from the standpoint of archi-

ctural design, the effect would be equally satisfactory if the spacing of openings rresponded with building material units. The waste pile found about every uilding, especially small houses, bears witness to the lack of consideration these ems receive. As material prices increase, the necessity for such conservative ethods becomes more and more apparent.

Window sizes based on stock glass units is another economy. The speculative uilder has for years determined window openings by standard sizes of glass. rchitects take exception to the proportion of such openings, but it is possible to esign windows of good proportion in perfect scale with the work generally, and dhere to standard glass sizes.

These observations are not intended as a defence of speculative builders' ethods. They are, however, a plea for a careful study of building methods, and aterials available, and for the application of the results of such study to future uilding, so that people of low earning capacity may obtain permanent homes and easant and healthful surroundings.

The materials available in various localities have developed certain standard ethods of construction, but of recent years there has appeared a lack of appre- ation, or understanding of underlying principles, which is mainly responsible for ie rapid depreciation of present day work. Builders perfectly understand that rinkage, in wood construction especially, is the cause of much settling, resulting n damage to plaster, sagging of doors and windows, and general depreciation. t is also generally recognised that much of this can be overcome by avoiding lacing wood in compression across the grain. Yet it is a fact that except where uildings are erected under careful supervision, because erection is somewhat mplified, this consideration is sometimes overlooked, and studs, plates, sills, or ists are framed so as to multiply instead of to reduce the shrinkage.

The brick wall is probably the standard by which other wall construction is dged. The appearance of brick houses is greatly improved where care is taken o avoid a glaring colour in the brick.

Of recent years many other materials have come into more general use. Hollow tile will be found a perfectly satisfactory and economical material for nexpensive houses, provided care is exercised to see that only well burnt hard le is used, and that all joints are filled with mortar. If this is done, and a Port- nd cement stucco applied to the exterior, the furring may be omitted on the nterior and the plaster applied directly to the walls. Hollow tile for load bearing alls should not be less than 8 inches thick.

A hollow tile is also manufactured having a salt-glazed exterior which pro- oses to eliminate stucco. This has proven very unsatisfactory on at least one rge housing development in Canada, and until the product has become more idely known, it is not recommended for housing work generally.

Concrete has been advocated as ideal for house construction. There are two assifications for concrete construction:

Monolithic, i.e., poured into place, and Precast.

The Monolithic concrete wall is cast between forms of wood or steel, and roviding the mixture is of proper density, gives a permanent and jointless water- roof wall. The wall has, of course, to be furred, lathed and plastered in the same nanner as brick, to eliminate condensation on days when humidity is high. Un- ortunately, the surface of concrete, as it comes from the forms, has very little exture, and is generally unsatisfactory in colour. The usual practice, therefore, as been to apply a coat of stucco for the purpose of overcoming this unsightliness. his, however, means added expense.

The cost of forms for Monolithic construction also constitutes a very heavy charge against the work, unless they can be re-used many times. There are several types of sectional forms on the market, but none of them are sufficiently elastic to permit of variety in exterior treatment and, consequently, most of the concrete house developments are monotonous and uninteresting.

Precast concrete construction consists of sections cast in a yard or in a plant, and then set in position. The size of the Precast units varies from concrete blocks weighing about 65 pounds to an entire wall or floor section. Large Precast units were first used on the Russell Sage Housing at Forest Hill, Long

Illustrating both types of Detached Houses.

Island, but as this cannot be classed as a workman's development, the methods employed are not of much value in a discussion of inexpensive houses. A recent development at Youngstown, Ohio, by the Unit Construction Company, illustrates the application of large Precast units to workmen's houses. The construction is undoubtedly permanent, but in appearance is not very satisfactory. The expensive mechanical equipment required for setting large units also restricts its use to large developments.

Small Precast units, known as Hydro-Stone blocks are being used extensively on reconstruction work in Halifax. These blocks are entirely different from other concrete blocks, both in shape and in finish. Consequently, practically all the

jections which heretofore have been raised against the use of concrete products are ercome. A somewhat extensive plant, however, is required for the economical anufacture of the blocks, and unless the work is undertaken on a large scale, these hits cannot profitably be employed.

Stucco as a finish for exterior walls is rapidly gaining in favour, and is de- rable both on account of the elimination of frequent repainting, and because of s fire resisting qualities.

Where frame construction is permitted, the cheapest wall is a 2 inch by inch stud frame, lathed and plastered on the inside, sheathed with Bishopric ucco board on the exterior and finished with cement stucco. Better results will obtained if the exterior walls are covered with sheathing board before applying e Bishopric stucco board. A still further improvement, considered from the andpoint of heating, will be to use Bishopric stucco board and plaster on the side of exterior walls instead of lath and plaster.

For the information of those unfamiliar with building materials, it may be plained that Bishopric stucco board consists of wood lath, embedded in an asphalt astic on a heavy backing of fibre paper. The edges of the laths are bevelled so at a dovetailed key is provided for plaster. The laths are a standard length of ur feet and must be secured to studs with a nail at every bearing, similarly to dinary laths. Bishopric stucco board costs more than wood lath, but consider- ly less than wood sheathing, building paper, furring and lath, and gives almost satisfactory results.

Wood shingles or clapboards give satisfactory results, although creating a eater external fire hazard. There is always, however, a maintenance cost for painting. This can be greatly reduced by the use of stain. As a matter of fact is extremely doubtful whether any paint should be used on the exterior of in- pensive houses. A lead and oil paint, satisfactory in appearance, and with good earing qualities, cannot be obtained in the cheaper grades, and there is nothing ore unsightly than a house upon which cheap paint has been used. There are, owever, a number of very satisfactory creosote stains on the market and these are commended for the general exterior use.

The cost of different building materials varies greatly with the locality, and, nsequently, an estimate which would hold in Toronto would be of little value to e builder in some other section of the Province. It is believed, however, that lative values would be of assistance, and the following table giving such relative st per square foot of wall surface has been compiled:—

Balloon Frame	2" x 4" studs.....	18c.
Exterior	Bishopric Stucco Board and Stucco	
Interior	Lathed and plastered	
Balloon Frame	2" x 4" studs.....	23c.
Exterior	Bishopric Wall Board Shingles	
Interior	Lath and Plaster	
Balloon Frame	2" x 4" studs.....	26c.
Exterior	Sheathed Bishopric Stucco Board and Stucco	
Interior	Lath and Plaster	
Balloon Frame	2" x 4" studs.....	26c.
Exterior	Sheathing, Building Paper and Shingles, stained	
Interior	Lathed and Plastered	

Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Sheathing, Building Paper, Clapboards, painted ..... Lathed and Plastered	27c.
Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Sheathing, Building Paper, Furring, Metal Lath and Stucco ..... Lathed and Plastered	31c.
8″ Brick Wall	Furred on inside ..... Lathed and Plastered	40c.
8″ Hollow Tile	Exterior Stuccoed ..... Interior Plastered	40c.
8″ Concrete Wall ...	Exterior Stuccoed ..... Interior Lathed and Plastered	47c.

Assuming the cheapest construction, wood frame, lathed and plastered on the inside, sheathed with Bishopric stucco board and stuccoed on the outside, as a standard, the relative cost for the six-family group illustrated in Drawing G-1 would be as follows: —

Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Bishopric Stucco Board and Stucco ..... Lathed and Plastered	100%
Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Bishopric Wall Board Shingles ..... Lath and Plaster	101.7%
Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Sheathed, Bishopric Stucco Board and Stucco ..... Lath and Plaster	102.3%
Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Sheathing, Building Paper and Shingles Stained ..... Lathed and Plastered	102.3%
Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Sheathing, Building Paper, Clapboards, Painted ..... Lathed and Plastered	103.1%
Balloon Frame ..... Exterior ..... Interior	2″ x 4″ studs..... Sheathing, Building Paper, Furring, Metal Lath and Stucco ..... Lathed and Plastered	104.5%
8″ Brick Wall	Furred on inside ..... Lathed and Plastered	107.6%
8″ Hollow Tile	Exterior Stuccoed ..... Interior Plastered	107.7%
8″ Concrete Wall ...	Exterior Stuccoed ..... Interior Lathed and Plastered	110.7%

In a semi-detached house similar to S-D-1 the difference from the standard would be increased by about 50 per cent., and in a detached house by about 100 per cent., since the exterior wall surface increases in about this ratio. Thu

the percentage for the 8-inch brick wall, for example, in the semi-detached house would become 111.4 per cent. and in the detached house 115.2 per cent.

Do cellars or basements add to the cost of a dwelling? There may be instances where there is little, if any, saving by their omission, but in general the inclusion of a cellar or basement entails a considerably greater expenditure. A foundation wall carried four feet below grade is sufficiently protected from frost. With a minimum height of two feet from grade line to first floor there would not be sufficient headroom beneath the floor joists to permit of a cellar. An addition of one foot increases the foundation wall just that much, and unless the first floor is raised in relation to grade, extra excavation is required. Except in rare cases, trenches for foundation walls, allowing for forms, can be excavated for less than the cost of excavating the entire area covered by the house.

A cellar or basement without a concrete floor is not recommended. This charge, then, must also be added in computing the cost of a cellar.

There are many who cannot conceive of a comfortable house without a furnace, yet the furnace heating has been included in the list of desirable, but unnecessary items. In planning inexpensive houses, desirable additions must be reduced to dollars a month rent, and then the question asked: "Can the tenant afford it?"

Hot water heating systems, when properly designed and installed, are undoubtedly the most satisfactory. The cost, especially at existing prices, is entirely too high to permit serious consideration for inexpensive houses. The least expensive furnace installation is the gravity hot air furnace. The lowest recent quotation on a hot air installation, for a four-room group house, amounted to one hundred and twenty-five dollars. This is an exceptionally low price. To this must be added at least one hundred dollars for construction of cellar or basement, giving a total of two hundred and twenty-five dollars, or an added monthly rental of almost two dollars.

Heating by stoves will generally be found cheaper and more efficient for the smaller houses. When a coal range is used for cooking, there will be sufficient heat to maintain a comfortable temperature during late spring and early fall. Small stoves of the type known as "Quebec Heater" are quite efficient and can be conveniently placed for heating halls and bedrooms. A great deal of fuel can be conserved by utilizing long runs of stove pipes, and at a convenient point expanding into a "drum." Many of the smaller houses at Morgan Park, Duluth, an industrial development erected by the Minnesota Steel Company, are heated quite satisfactorily in this manner.

A fireplace is a very desirable and popular feature. A properly constructed open fireplace, however, requires careful supervision during construction, and is a somewhat expensive item. An English coal grate eliminates a great deal of the expense and the necessity for careful supervision of the work. These grates can be purchased for, approximately, twelve dollars. Where the flue is grouped with other flues, the total additional cost will not exceed fifty dollars. There has been a number of attempts to increase the efficiency of the fireplace by utilizing the heat which generally is lost by way of the chimney. These efforts are worthy of more serious consideration, particularly for use in the smaller inexpensive houses, where a furnace is beyond the limit of cost.

A reference to design has been left to the last, not because it is of least importance, but rather because the considerations already discussed are all elements going to make up the design—the manner in which those elements are combined

differentiating between mere building and architecture. Too often architecture has been considered as "construction decorated"—the decoration being in most cases of doubtful merit.

There is no good reason why an inexpensive house, or group of houses, should not be quite as attractive as larger and more expensive buildings. It is not, however, the purpose of this report to define the limits of good design. Good design is to a degree a matter of taste. Convenience and sound construction should receive primary consideration, but the appearance need not suffer on that account. As the life of the house is prolonged by good construction, so its value is enhanced by attention to architectural effect. True art is simple; and the inexpensive houses under consideration, if lines and proportions are carefully studied, may readily be made to satisfy the claims of art, and thus to become a source of pride and pleasure to the occupants and the community.

Appendix I.

REQUIREMENTS AND RECOMMENDATIONS OF THE FEDERAL GOVERNMENT.

OTTAWA, February 18th, 1919.

TO HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL.

The Housing Committee of the Privy Council, appointed under Order in Council, P. C. 3067, of 12th December, 1918, to formulate the general principles which should be followed in any housing schemes in order to secure the results aimed at by the said Order in Council and to communicate with the Governments of the several provinces of Canada with a view to agreeing with the Governments of the said provinces respectively upon general schemes of housing so that the moneys provided by the Order in Council of 3rd December, 1918, P. C. 2997, may be applied for the purposes contemplated by the said Order, respectfully reports as follows:—

Your Committee has formulated the general principles which should be followed in any housing schemes in order to secure the result aimed at by the said Order in Council, and has submitted these general principles to the Governments of all the provinces and requested suggestions from the said Governments with reference thereto, and after duly considering all such suggestions, your Committee begs to submit the following statement and report and recommends that upon approval thereof by the Privy Council, copies of the said memorandum be furnished to the Governments of each of the provinces of Canada.

INTRODUCTION.

General Object in View.

1. The object of the Government in making provision for a loan of $25,000,000 at 5 per cent. to the provincial governments for housing purposes is—(*a*) to promote the erection of dwelling houses of modern character to relieve congestion of population in cities and towns; (*b*) to put within the reach of all working men, particularly returned soldiers, the opportunity of acquiring their own homes at actual cost of the building and land acquired at a fair value, thus eliminating the profits of the speculator; (*c*) to contribute to the general health and well-being of the community by encouraging suitable town planning and housing schemes.

Promotion of Housing Schemes Matter for Provincial and Municipal Jurisdiction.

2. The provision of houses, so far as it may be regarded as a public duty, is a matter which comes more properly within the jurisdiction of the provinces and municipalities, and in ordinary circumstances, the question of what regulations should be imposed, and what policy should be adopted, in regard to the administration of housing schemes, are matters for these Governments. As the Federal Government will lend the money on the general security of each province, it is not necessary to impose financial regulations as to the means which should be employed to safeguard the loans.

Conditions on Which Loans Will Be Granted by the Federal Government.

But Some Federal Regulation Needed to Achieve Object of Federal Government.

Having regard, however, to the responsibility incurred by the Federal Government in providing the money, and the object for which the money is proposed to be lent, loans will be made to the Provincial Governments on the following four conditions:—

1. Approval of General Provisions.

Each province shall prepare and submit to the Federal Government for approval a general housing scheme, setting out the standards and conditions to be complied with in connection with local housing schemes. The general scheme of each province should include a schedule of minimum standards in regard to grouping of houses, provision of open spaces, sizes and types of houses, sizes and heights of rooms, provisions of light and ventilation, heating, lighting, character of materials, etc., which it is proposed should be enforced as the minimum requirements for health, comfort and convenience.

2. Maximum Cost of Dwellings, etc.

The object of the Federal Government being to facilitate the erection of dwellings at a moderate cost suitable for working men, particularly returned soldiers, it is necessary to place a maximum on the amount which may be loaned per dwelling, and the following maximum has been fixed having regard to the conditions existing in the different provinces.

(*a*) Detached or semi-detached dwellings with walls constructed wholly or partly of frame, stucco on frame, brick veneer, inclusive of the capital value of the site and necessary local improvements:—

With 4 or 5 rooms, exclusive of bath room and summer kitchen	$3,000 00
With 6 or 7 rooms, exclusive of bath room and summer kitchen	3,500 00

(*b*) Detached, semi-detached, groups of three or more or duplex (cottage flat) dwellings with walls of brick, hollow tile, stone or concrete and roofing of fireproof materials, inclusive of the capital value of the site and necessary local improvements:—

With 4 or 5 rooms, exclusive of bath room and summer kitchen	$4,000 00
With 6 or 7 rooms, exclusive of bath room and summer kitchen	4,500 00

3. Ownership of Land.

Public money may be advanced for building houses on sites owned by:—

(*a*) The Provincial Government or Municipality.

(*b*) Housing societies or companies comprising groups of citizens associated together to promote good housing, supplied with proper improvements; such societies

or companies to have not more than a statutory limitation of dividends payable on stock of 6 per cent.

(*c*) Owners of lots for the purpose of erecting houses for their own occupancy.

4. Terms of Years for Repayment of Loans.

The Federal loan will be repayable by the Province over a period of twenty years. Provided that in order to encourage the erection of more durable buildings, and to bring the financial terms within reach of a large number of workers, the period of twenty years may be extended to thirty years in respect to any portion of the loan which the Provincial Government may decide to re-lend for thirty years for such purposes as purchasing land or erecting buildings under the above class. Repayments by the Provinces on account of Federal loans may be made quarterly, if so desired, or otherwise as may be agreed upon.

General Principles and Standards Recommended for Consideration in Schemes.

Subject to the four requirements set forth in Part II of this memorandum, the Federal Government does not impose any conditions in regard to the nature of the scheme or the type and character of the dwellings to be erected, but strongly recommends that in framing schemes, consideration be given to the following matters:—

1. Acquisition of Sites, etc.

The success of the housing movement depends upon the acquirement of suitable land at its fair value, and at a cost which working men can afford to pay. It is essential therefore that statutory provision shall be made by the provinces for a cheap and speedy method of compulsory taking of the land required for housing purposes. To facilitate proper planning and to secure economy in connection with housing schemes, comparatively large sites should, as a rule, be chosen so as to permit of comprehensive treatment. Such sites should be conveniently accessible to places of employment, means of transportation, water supply, sewers and other public utilities.

2. Planning of Sites, etc.

Where housing schemes are proposed sites as well as the buildings should be properly planned so as to secure sanitary conditions, wholesome environment and the utmost economy. The land should be sold under building restrictions which will insure its use for residential purposes only, and should it thereafter be desired to utilize any of the lots so sold for stores or other business purposes, the increased value for such business sites should be made available for public purposes in connection with such scheme.

3. Loans for Separate or Individual Houses.

In those cases where loans are given to working men owning lots, care should be taken to ensure that the site proposed to be built upon occupies a healthy and convenient situation, and that suitable provision can be made in such situation for the erection of a sanitary type of dwelling with adequate provision for open spaces.

4. Limit of Income of Persons to be Provided with Dwellings.

In order to insure that the money shall be loaned to those who most need it, no person in receipt of an income exceeding $3,000 per annum should be eligible as a purchaser or tenant of a house erected with the aid of Government funds in any schemes carried out by provincial governments, municipalities, housing associations, or owners of lots.

5. Construction of Local Improvements to Precede Occupation of Dwellings.

In cities and towns, local improvements, comprising necessary sewers, pavements, sidewalks, water mains and lighting services, should be constructed as far as practicable prior to or simultaneously with the building of houses, and no house should be permitted to be occupied until provided with proper means of drainage and means of sewage disposal and an adequate supply of pure water.

6. Reservation of Sites for Playgrounds, etc.

In all new housing schemes, provision should be made for reserving at least one-tenth of the total area of land being developed for building purposes, as open space for play grounds, etc., and also for reserving suitable sites for such institutes, public buildings and stores as may be required.

7. Loans to be Used for Purchasing and Developing Land and Erecting Dwellings.

Advances should be made for: (*a*) The purchase of suitable land for housing schemes. (*b*) The construction of the necessary local improvements on and in connection with the development of such land as part of a housing scheme. (*c*) The erection of sanitary and economical dwellings.

8. Proportion of Cost of Land to Dwelling.

The proportion of the money lent in respect of the capital value of the bare land (i.e. irrespective of all local improvements or other public services provided to adapt the site for building purposes) should not, as a rule, exceed one-tenth and in no case should exceed one-eighth of the above gross cost of the dwelling. Example: In computing the value of the bare land under this clause, the cost of such improvements as have been made should be deducted. For instance—the sum of $3,000 might be lent in the following proportions:—

Cost of dwelling	$2,400 00
Cost of land	300 00
Capital cost of local improvements	300 00
	$3,000 00

If the value of the bare land is estimated to exceed more than one-tenth ($300) in this case, the extra cost should be met by the owner.

9. Recommendations as to Minimum Standards in Regard to Sites.

(*a*) Streets: All dwellings erected in cities and towns should face on streets so constructed as to provide dry and convenient means of access to such dwellings, or on approved courts opening on to such streets, and in no case on lanes or alleys.

(*b*) Sanitary Provisions: In cities and large towns, sewers and water mains should be provided to enable connections to be made as buildings are erected, and in small towns, villages and rural areas where no sewers exist there should be proper sanitary provision for sewage disposal to the satisfaction of the Board of Health, or Sanitary Engineer of the Province. (*c*) Water Supply: All dwellings should have connected to them an adequate supply of pure water before occupation is permitted for purposes of habitation. (*d*) Drainage of Sites: No building should be erected on a site which shall not have been drained of surface water, or which shall have been filled up with any material impregnated with fœcal matter, or with animal or vegetable matter, unless and until such matter shall have been removed, and the ground surface under such building shall be properly asphalted or covered with concrete or other dry and hard material to a thickness of six inches at least.

10. Recommendations as to Minimum Standards in Houses.

(*a*) Spaces Around Dwellings: Provision should be made for securing ample garden and air space surrounding the dwellings to be erected. In cities and towns each dwelling should occupy a lot comprising at least 1,800 square feet, and in villages and rural areas at least 4,500 square feet. Not less than 50 feet of clear open space in depth should be provided at the rear of dwellings and the buildings should not occupy more than 50 per cent. of the lot. Spaces between the gable or end walls of adjacent buildings should be provided as follows:—

Between all buildings (single or in pairs), the walls of which are built entirely of wood or partly of wood and partly covered with stucco or brick veneer, or between all buildings which are more than rooms deep, and have side windows—16 feet.

Between buildings, the walls of which are built of brick, brick veneer, stucco, hollow tile, stone or concrete, with fire-proof roofing material, which do not exceed two rooms deep—9 feet.

Dwellings erected of stucco or frame or brick veneer must be either detached or semi-detached (see clause 2, maximum cost of dwellings, etc.). In all cases hollow walls should be provided.

(*b*) Sanitary Conditions and Ventilation: Baths and water closets should be provided in each dwelling, preferably on the bedroom floor. Baths and sinks should have hot and cold water. Water closets should never open from a room and should have a window opening to the outer air. Basements should not be used for habitation. Every habitable room should have at least one window opening to the outer air. Each room should have a window space of at least one-tenth the floor area, and cross ventilation should be provided where practicable.

(*c*) Height and Size of Rooms: Rooms should not be less than 8 feet in height in the first floor, and 8 feet over two-thirds of the floor area in bedrooms. One living room should not be less than 144 square feet, and two of the bedrooms not less than 130 and 100 square feet respectively.

(*d*) Height and Type of Buildings and Character of Construction: Buildings should not exceed 2½ storeys in height except in the case of cottage flats, which might be permitted to be 3 storeys if constructed of fire-proof materials. Houses should have 4, 5 or 6 rooms, and in exceptional cases for large families 7 rooms, excluding bathroom

(*e*) Conversion of Dwellings into Stores, etc.: Provision should be made to prevent dwellings being converted into stores or used for any purpose other than a dwelling, except with the authority of the Provincial Government or other suitable authority, and only then on receipt of a petition of two-thirds of the owners and occupiers in the street in which the dwelling is situated. Brick, hollow tile, stone or concrete should be used as far as practicable, preference being given to those materials which are produced locally.

11. Legal and Other Costs.

A special scale of legal costs should be fixed so as to reduce the expense of the transfer of land and houses. It would reduce architectural expenses if the Provincial Governments issued a series of model designs of suitable dwellings, with detailed drawings, bills of quantities and estimates.

12. Compliance with General Scheme, etc.

All buildings should be erected in accordance with a general provincial scheme and in compliance with the requirements of standard forms of specification and contract which shall have been previously approved by the Provincial Government.

Conclusion.

The compulsory requirements in Part II of this memorandum have been kept down to the minimum of what is necessary to secure compliance with the Order in Council under which the Federal loan is granted.

The suggestions in Part III are for the consideration of the Provincial Governments in preparing their schemes. They have been carefully considered and have been put forward as minimum standards for health and comfort, and not as ideals that are difficult to attain. It is, therefore, hoped that the Provinces and Municipalities may be able to embody these suggestions in their schemes. Additional recommendations may be made from time to time as experience is gained, and comparative information is collected from different provinces.

To assist in carrying out the general objects in view, the experts of the Federal Government are available for conference with the officers and experts of the Provincial Governments regarding the details of schemes and preparation of general provisions or standards, and any other matters on which the officers of the provinces may desire to confer.

All of which is respectfully submitted.

(Sgd.) N. W. Rowell,

Chairman.

Appendix II.

HOUSING AND TOWN PLANNING IN GREAT BRITAIN.

Memorandum by Mr. Thomas Adams.

FUNDAMENTAL DIFFERENCES BETWEEN CANADIAN AND ENGLISH CONDITIONS.

There are certain fundamental differences between the conditions in Great Britain and Canada which make it difficult to make comparisons of value. When these differences are understood and proper consideration is given to them, a great deal can be learned from English experience and projects. Two extremes which have to be avoided are:

1. Making the imperfect analogy which ignores differences of conditions; and
2. Putting forward these differences as an excuse for taking no notice of English experience and examples.

The former is the refuge of the enthusiast for reform, and the latter, of the ignorant. Housing and town planning developments in England are of great importance to the student and politician in Canada so long as we avoid these two extremes. Three of the conditions which are different are as follows:

1. Climatic conditions,—affecting methods and costs of construction of dwellings and certain aspects of street planning and construction of local improvements.

2. Different systems of assessing land for purposes of taxation. The English system is based on annual revenue and the Canadian system on estimated capital value. This affects housing and town planning by encouraging different systems of land development. The Canadian system, for instance, appears to make land dearer in cities and to discourage agricultural use of land adjoining cities.

3. Difference in method of financing local improvements. In Canada a larger share of the cost of such improvements is borne by the city than in England and the whole cost of some local improvements is financed by the cities by Canadian and not by English cities. There is practically no local improvement tax in English cities. The greater part of the burden of constructing local improvements is put of the owners of the land, who are regarded as the primary and main beneficiaries of such improvements. This has had the effect of keeping down the financial responsibilities of the municipalities and also of placing such difficulties in the way of land speculation that comparatively little speculation exists in building sites in the suburbs of towns. Such high land values as exist in English cities are more the result of monopoly than of speculation. The exact reverse is true of Canada. Hence the proposals for reforming the systems of taxation or dealing with the housing conditions should have regard to this great difference.

The above three differences partly affect the architectural, the engineering and the real estate or financial aspects of the questions of housing and land development. The well trained architect alone can properly discriminate between the different forms of construction and planning adaptable to the two countries and he requires to know something of both in order to do so. The difference in the system of

construction and finance in respect of local improvements is a study of an engineering character which should receive more attention from engineers. The third question in regard to the system of assessment is a matter for financial and real estate experts, and needs study.

While the above three fundamental differences require further investigation, enough is known about them to enable us to learn much from English housing and town planning policies and schemes. Two things at least are certain, namely, that England has had more experience than Canada in dealing with the housing problem by Government agencies and that in the last 20 or 30 years Engand has achieved more progress in effective housing reform than any other country. We might add a third factor, namely, that the general results of housing in Canada during the last twenty years leave much to be desired in the way of sanitation, durability of construction and general control of the surroundings of dwellings, whereas, in England, steady improvement has been made in these respects and a higher standard followed in connection with the building of small houses. These general differences of condition are reflected in the comparatively high death rate, especially among children, and the excessive cost of fire preventive measures and insurance, of fire waste and of municipal government in Canada.

Canadian Problem How to Improve Standards.

The problem before Canada is how to improve its standards so as to obtain better results, having full regard to the different conditions between Canada and other countries. There is nothing in these conditions, of a fundamental chara ter, which prevents us from having equally good standards and achieving as good results. Indeed our aim should be to leave other countries behind in these respects and to show, as a new country, that we have learned the lessons taught by older civilisations and have prevented evils which other countries have found it so difficult and expensive to cure.

The Problem an Old One in Britain.

A study of the housing problem in England takes one back into remote history but the problem which requires to be studied for purposes of comparison with Canada is comparatively new. For 70 or 80 years England has been wrestling with the problem of the kind of slum that was the outcome of the industrial revolution, and of the crowding of people into large cities. Lord Macaulay warned his country "that the Huns and Vandals that will destroy the Christian states of England are not being bred in the wilds of Asia, but in the slums of our great cities" and Carlyle said in *Past and Present,* that the government of England could, if it wished, order all dingy manufacturing towns to cease from their soot and darkness and let in sunlight and air. Lord Shaftsbury was the first constructive housing reformer to impress the English people with the importance of better housing conditions. Even in his day the main argument against housing reform was that the occupant or tenant of the house was to blame for his conditions and not the lack of efficient supervision by public authorities. What has been learned is that both are to blame and that it is no excuse for the public authority to neglect its duty, that individual reform and education is needed. The latter depends largely on public guidance, and example.

Since the day of Lord Shaftsbury, there have been Royal Commissions studying the problem of housing—many housing acts have been passed, (the principal act

n 1890), and still England is experimenting with the housing problem. Housing famines have been referred to as existing in England for many years and over-crowding has accompanied over-building of houses, as well as shortage of houses. The reason for this is that private enterprise has never coped with the problem of housing the unskilled labourer. It is folly to assume that the poorest class of citizens can be provided with adequate and healthy housing accommodations, within his means, without Government aid and supervision. The act of 1890, supplementing the Public Health Acts of 1875 and later years, have done much to improve housing conditions, especially in regard to:

1. Prevention of damp through defects of site or improper construction.
2. Adequate air space within and surrounding the dwelling.
3. Sound and safe construction.
4. Adequate means of ventilation and proper drainage and sanitation.
5. Preparation of improvement schemes for displacing slum dwellings with model houses.
6. Carrying out of housing schemes with Government aid through municipalities and housing societies.
7. Registration and control of common lodging houses.

About the beginning of the present century there had been sufficient experience to reveal to the British people that something more drastic in the way of housing reform was needed if the problem was to be solved. Up to 1899, a little more than a million dollars had been sanctioned in loans for the housing schemes. Following the amending Act of 1899, greater activity was shown by municipal authorities and in 1901, over two million dollars was spent in one year. Then there was a gradual falling off in municipal activity until the passing of the Housing and Town Planning Act in 1909. This Act began to take real effect in 1912 and during the three years, 1912-14 about $6,800,000 was sanctioned for erecting houses by local authorities. These figures look small compared to those used in connection with the reconstruction problem as it is now being faced in England. They justify the statement, however, that the English people have not arrived at their conclusions regarding the solution of the problem by any hurried and ill-digested scheme of government housing. They have only slowly appreciated the importance of dealing with the problem by Government aid over a long period of years, and any present decision to enlarge their programme has been arrived at after more than a quarter of a century of experiment carried out in the face of every kind of obstruction.

The success of England in housing reform in recent years is reflected in the fact that even Germany, with all its ideas of self-sufficiency, was worshipping at the shrine of the English garden suburb before the war. Although its propagandists have been denouncing English slums as part of their war publicity, its professors and officials have been persuading their German cities to alter their system of housing in accordance with recent English practice. Then when the time came for the United States to inaugurate a war housing policy it turned to England for their example and the garden suburb of England has afforded the inspiration for most of its war housing schemes. England itself has no illusions upon the question of what is the right mode to deal with the housing problem now that it has tested so many methods and found so many wanting.

Housing and Town Planning Connected.

Reduced to its simplest form the English housing policy may be described as recognition of the following facts:

1. That a policy of new construction in the suburbs of towns must proceed contemporaneously with slum clearance, both for the purpose of preventing the repetition of slums in the future and for the purpose of attacking the slum itself, indirectly.

2. That a house consists of three things—the site, the dwelling and the local improvements and not merely the building.

3. That the home is complementary to the factory and that transportation and marketing facilities have to be planned in relation to both the home and the factory in order to get right conditions of living and industry.

4. That having regard to the above three factors public aid to housing should be directed towards building up the open fields in the suburbs rather than of congesting existing centres, even with model barracks or tenements.

An analysis of the above four questions shows that the housing problem is as much a problem of land development as a problem of building construction; as much a problem of town planning as of housing. The two have to be dealt with together. It is the realization of this interdependence which has made the English people unite housing and town planning together as one problem, and in the same Act of Parliament.

Origin of British Town Planning Movement.

The British town planning movement had different origins, all of which had cumulative effect in showing the need for more vision and for a more constructive policy of housing reform. In early days of housing reform in England it was thought that the obvious thing was to attack the housing problem by direct measures aimed at lending money to persons wanting to build their own homes, and to demolishing slums at public expense. "The Small Dwellings Acquisition Act" of 1900, which was fathered by Mr. Joseph Chamberlain, has, however, been used very little, although it was proclaimed as a great measure of housing reform. It provided cheap money for any workman who wanted to buy his own home. It was overlooked that in dealing with the housing problem they were not dealing with a static condition, but with one of growth and change in which it is necessary to provide facilities for proper and convenient means of distribution of the population and industries, as well as facilities for building odd houses here and there, to fit in with existing conditions. Systems of transportation, among other things, change, and as they change they produce new elements in the process of distribution.

Among the object lessons which changed public opinion in England, were the model villages of Bournville and Port Sunlight. These were built by manufacturers for the work people in their industries. Mr. George Cadbury, at Bournville, and Mr. W. H. Lever (now Lord Leverhulme) built these healthy and attractive villages. It was a form of profit sharing with their workers and was not primarily designed to show, although it had the effect of showing, how to solve the housing problem. In 1900 these schemes were sufficiently advanced to prove that the housing problem had to be solved in the green fields around the cities instead of by reconstruction in the crowded centres. The Garden City of Letchworth was then started and one of the first things that impressed public opinion

as to the feasibility of that scheme was a conference at Bournville at which Earl Grey, late Governor General of Canada, presided.

It is impossible in the brief space allotted to me to do more than refer to the fact that these movements have proved that housing reform, to be effective, has to be broadened in scope and has to deal with more fundamental conditions of social life than has hitherto been dreamed of. Its relation to the land question, industry, transportation, drift of population, etc., is now better understood.

Industrial Decentralization.

The Garden Suburb and Garden City movements derive their economic soundness partly from the modern tendency of manufacturers to move out from crowded centres to rural and semi-rural districts, and partly from the development of transportation facilities. There has been, in the past, too ready an acceptance of the belief that manufacturing districts are a natural growth, and that when once established, they are fixtures; whereas they are largely an artificial creation. It is granted, of course, that natural conditions have much to do with industrial concentration in particular localities.

The undue congestion of the population in central areas of modern cities becomes as great a disadvantage to efficient distribution as undue diffusion. The even and comparatively thin development of the city of London prevents the extent of interference with business distribution and traffic which arises from the undue congestion in cities like New York. One reason why the city of London has much more healthy housing conditions than say, the city of Berlin, Germany, is that its density of people per acre is 10,404 per square mile in London to 26,890 per square mile in Berlin. In spite of the low density in London, the tendency in recent years has been for London to spread itself still more, and for population to thin out in the central districts. This tendency has gone on in other large cities in England, and it is now prevalent in the United States and Canada. Those who claim that it is undesirable to build houses on cheap land in the suburbs on the ground that people want to live near their places of employment, omit to pay sufficient regard to this tendency.

The expense of transporting people from remote suburbs to central districts has to be considered as one of the disadvantages of permitting cities to grow in a haphazard way. The movement of industries to the suburbs should be accompanied by a parallel movement of homes so as to minimize the cost of transportation and causes of congestion. In England, the even distribution of industries and population has been aided by legislation promoting cheap workmen's trains. Cheap and rapid transportation, however, may increase congestion as well as relieve it unless accompanied by comprehensive planning of town development. To those who look to underground transportation as the means of solving the problem of congestion, the facts of its enormous cost and that it seldom pays in moderate sized cities, are usually overlooked. It is certain that the tendency in future will be towards diffusion of marketing centres, and industries, as well as of population. At present, cities like Toronto, are developing new centres for purposes of shopping and amusement. Toronto is gradually becoming an aggregation of several cities instead of one city. This movement should be taken hold of and planned so as to get healthy and economical development and so as to secure some of the greenness and fresh air of the country in the new suburbs that must grow up surrounding the city.

The process of diffusion will help in time to disintegrate the slum districts and make them unprofitable to keep in their present condition. At least it is necessary to encourage house-building in the suburbs, on cheap land, as an offset to congestion of population on dear land—which is in itself a cause of unhealthy densities and slum conditions.

A proper understanding of the housing problem in England cannot be obtained without recognition of the powerful influence which industrial diffusion has had on the constructive housing policy of the last few years. The Garden City and the Garden Suburbs have been comparatively small experiments in proportion to the size of the housing problem which needs to be dealt with. Their value has been due to the soundness of the economic basis and example, and not to their size and extent.

The introduction of town planning into the Act of 1909 was largely the outcome of the lessons taught by the Garden City movement as well as by the logic of events in connection with costly attempts which were made to solve the housing problem by slum clearance and by the comparative failure of attempts to lend Government money to erect isolated groups of buildings. The importance of the town planning developments in connection with housing schemes may be seen in the reference which is made later to the war housing and post war housing schemes of Great Britain.

Registration of Common Lodging Houses.

One of the valuable features of British housing legislation has been the extent to which control has been exercised over common lodging houses. All municipal authorities are required to control houses occupied by "roomers," and regular inspection has to be made to secure that conditions are sanitary, air space provided, water supply ample, and that no overcrowding is permitted.

Housing Schemes in England.

Under the Small Dwellings Acquisition Act of 1899, already referred to, houses on which advances could be made had to be of a value not exceeding $2,000, and the extent of the advance was limited to four-fifths of the market value, and in no case to exceed $1,500. While very little was done under this Act, and only one district used it to any extent, the building societies which lent money at a higher rate of interest continued to grow. These societies had a capital of several hundred million dollars. Their success was largely owing to the fact that they had local organizations and the personal touch with their investors and borrowers. These advantages offset the advantages of cheap money offered by the Government.

The English Housing Acts, up to 1900, had four objects in view:

1. The prevention of overcrowding and nuisances in existing dwellings, and the enforcement of sanitary and building by-laws.

2. The demolition or alteration of unwholesome dwellings.

3. The acquisition of land at a reasonable price and the building of new houses thereon: and

4. The lending of Government money at a low rate of interest to enable persons to purchase their own homes.

These objects have been most successful in proportion as they resulted in giving stimulus to private enterprise and, least successful, in the proportion as they involved application of arbitrary action by the Government. The fact, however, that the Government had arbitrary powers was the chief cause of the operation of

private enterprise in improving conditions. Slum clearance has not proceeded very extensively because it has been too expensive. Every writer of authority has indicated that English housing administration has proved that the solution of the housing problem was not to be found by replacing the insanitary slum with sanitary tenements. Moreover, it was found that the cost of erecting block or tenement buildings was so much greater per room than the cost of erecting cottages that it paid to build cottages, even on dear land, rather than tenements, except in the most crowded and expensive districts.

The Attitude of Municipalities.

Municipalities have not been enthusiastic about applying housing legislation wherever it involved the least charge upon the public purse. They have always resented the building of houses for one class of the community at the expense of another. This attitude, however, has gradually been overcome because of the growing recognition of the fact that bad housing conditions injure not only those who suffer from them, but the whole community. It is cheaper for a community to help to improve these conditions, even if some citizens have to pay for the benefit of others, than to meet the cost of having slums, extra hospitals and industrial homes.

Rural Housing.

The conditions in England are very different from those in Canada in respect of rural housing. The most striking instance of Government aid to housing in rural districts is to be found in Ireland. When the writer visited Ireland on an inspection of housing conditions in 1906, 20,634 cottages had been erected under the Irish Labourers' Acts. Up to that year over $17,000,000 had been spent on rural housing in Ireland and a new Act made provision for an additional advance of $21,250,000, repayable by annuities of about $16.25, over a period of 68½ years.

Private Enterprise.

In England private enterprise was responsible for the erection of about 98 per cent. of dwellings before the war. By the term "private enterprise" is meant, not only the work of the speculative builder but also of the erections carried out by the great co-operative societies, the building societies, the Garden City Company, the large manufacturers like Lever and Cadbury, and the co-partnership associations. Private enterprise may, therefore, be divided into two categories: (1) The purely speculative class; and (2) The society or industrial class which builds for the mutual benefit of its members or employees.

The co-operative distributing societies in England have invested over $50,000,000 in houses, advancing from 75 to 90 per cent. of the purchase money, at from 3½ to 5 per cent., repayable in twenty years. These societies are not to be confused with the co-partnership building societies which were organized by Mr. Henry Vivian.

Municipal House Building.

In the report of the Local Government Board for 1913-14, a statement is given of the amounts which were advanced to municipalities for building houses between 1892—when the first advance was made—and 1914. The total for urban and rural authorities for the above period of twenty-two years amounted to $17,565,330, but, as already stated, no less than $6,800,000 of this sum was sanctioned during the

years 1912-14, largely as a result of the Town Planning Act. There was also advanced by the Public Works Loan Commission to housing societies, $5,279,470. This money was chiefly used in assisting co-partnership societies to build garden villages by lending them two-thirds of the cost of lands and houses erected by them. To show the rapid growth of this movement, immediately prior to the war. $3,764,005 was advanced in the four years ending 1913, as against $2,825,465 advanced during the previous nineteen years. It will be seen from these figures that the new movements for Government housing which are now on foot in Britain and the Dominions is likely to be enormously greater in volume and importance than anything that has formerly been carried out.

Housing During the War.

During the four years of the war comparatively little was done in the way of municipal or private housing in England. Such housing schemes as were carried out were directly for the purpose of prosecution of the war and consisted of dwellings for munition and shipbuilding workers. The housing schemes at Gretna, Well-Hall, Woolwich, Rosyth and elsewhere, have been so often described and illustrated that I will pass over them here except that it is desirable to repeat that although these schemes were carried out in the middle of the war, they contain all the good features of the English Garden Suburb. In building them the Government showed more, rather than less respect for the principles of town planning and for the advantages of permanent forms of structure because of the fact that they were building under the stress of war conditions. The illustrations appearing in the report of the buildings erected will be sufficient to show the truth of this statement.

The gradual process by which British people have been made to acknowledge the value of human welfare as an element in increasing industrial output has been slow and laborious, but it has been planted deeply in their minds, and apparently the war has had the effect of giving it a firm root.

After the War Housing.

It is natural, because of the past experience in Britain, to find therefore that one of the most pressing of post war problems is that of the provision of houses and the improvement of housing conditions and planning of towns. The Government has to assist in trying to meet a serious shortage of houses at a time when labour. materials and capital are short and dear. To ascertain what the need would be 1,806 local authorities in England were invited to send in information as to the number of houses they would require under any Government financial scheme. Over 1,000 indicated their willingness to carry out schemes on the assumption that financial facilities would be provided by the Government. The Government ultimately announced that they would be prepared to meet three-fourths of the loss on building houses that occurred in the seven years following the war. At the end of seven years any dwellings erected under the scheme would be valued, and 75 per cent. of the loss accruing from any depreciation below cost price would be met to that extent by the Government. It was decided to increase the grant beyond 75 per cent. in any case where it would amount to more than would produce a rate of a penny in the pound. Since the above scheme was announced the Government has been pressed, and is still being pressed, to further limit the obligations of the municipalities and to meet a greater share of the loss. It is anticipated that 500,000 will require to be built under the various schemes.

The appointment of Dr. Addison, late Minister of Reconstruction, to Minister f the Local Government Board of England, means that an extensive organization ill be set up in England to deal with housing construction. The following descrip- ion of the scheme of administration proposed is taken from the Glasgow *Herald,* anuary 10th, 1919:

"A Chief Commissioner in London and eight District Commissioners of Housing throughout England and Wales will be appointed to administer the scheme. They will be men with wide knowledge and experience of housing, and will be vested with important discretionary powers in respect to building schemes. They will be assisted by adequate technical staffs. A manual is in course of preparation, and will shortly be issued by the Local Government Board for use by local authorities and others as a guide to them on how to proceed with the proposed schemes. This manual will embody plans of several types of houses of the latest designs, such as premiated designs of the recent competition instituted by the Royal Institute of British Architects, the Tudor Walter's report, and 'type' plans prepared by the Local Government Board, with special reference to the necessity for planning a cottage in relation to aspect, so that the living and working rooms may have as much of the sun as possible whilst larders and stores receive as little as possible. The general aim will be to secure that only twelve houses shall be erected to the acre in urban areas and eight in rural areas. A great number of them, in addition to a kitchen, larder, scullery, three bedrooms, washhouse, and bathroom or bath, should in the opinion of the Local Government Board be provided with a comfortable living room or parlour and garden. Practically all the essential fittings were being standardised, including doors, windows, kitchen ranges, baths, bolts, locks, door handles, and general fittings, designs of which have been prepared and samples chosen. Arrangements are being made with the Ministry of Munitions to place orders for these standard fittings, and, where practicable, existing munition factories and works will be utilized for the production of fittings with a view to providing employment for as many munition workers as possible. The Local Government Board also supports the proposal that in districts where there are building trades employers of proved capacity the work in connection with the national housing scheme should be given to them by competitive tender in preference to contractors taking up huge contracts from the centre. The Board, acting in conjunction with the London County Council, is making arrangements for the erection in London of a village of model houses. Each house will be a complete model for the guidance of local authorities throughout the country, both as regards architectural style and internal arrangements. The houses will be erected from the plans which won the premiums in the recent competition instituted by the Royal Institute of British Architects.

"Many of the suggestions contained in the Tudor Walter's report will also be carried into effect in the building of these dwellings, and it is contemplated that the standard fittings shall be used in the construction so that they will be available at all times as a practical demonstration of the type of house the Local Government Board advocate. A proposal is also under consideration for the holding of a trades exhibition, at which the different manufacturers concerned in the erection, equipment, and furnishing of cottage houses will have an opportunity of displaying to the public their various goods."

Financial Results of Municipal Dwellings.

In England the financial results of erecting buildings have depended very largely on the types of dwellings erected. The three types usually built comprise block dwellings, i.e. tenement or apartment houses; cottage flats, i.e. two-storey buildings containing a self-contained flat on the lower and upper storey; and self-contained cottages in rows and pairs. The cost of sites for block dwellings has varied in different parts from $65 to $350,000 per acre. For cottage flats, improved land has cost from about $6,000 to $10,000 per acre, and sites for suburban cottages on an average, about $5,000 per acre. As a rule, tenement and block dwellings have not paid, especially where they have been erected as part of slum clearance schemes. The net returns from them have varied from about 1 to 4½ per cent. Cottage flats and cottages have varied in returns from 2¼ to over 5 per cent., with the greater number paying over 4 per cent. These percentages have to be considered in relation to the value of money prior to the war when the local authorities were able to borrow at about 3¼ to 3¾ per cent. The financial margin to be obtained from the erection of houses with public money is thus seen to be very small. It is only by good management and by dealing with the erection of houses in a wholesale way, in large groups or schemes, that sufficient economy can be exercised to avoid loss.

The indirect benefits must, however, be considered. If a municipality in England obtained 4 per cent. return on its schemes before the war, it was likely to carry out its housing scheme with hardly, if any, loss in money. It had, however, the benefit of the increased ratable value, the effect of its enterprise in improving the general housing conditions in its area and the improved standards of public health which resulted.

The utmost care and vigilance will be essential to secure satisfactory results from any public scheme of housing in Canada. All past experience must be taken advantage of to avoid the mistakes which have been made by practical business men in the past. Britain has done much experimentation that is of value to us in Canada, and so long as we recognize the importance and extent of the differences of conditions, we will be able to learn much from her experience. Above all, we have to learn that housing and town planning must go together, the first dealing with the erection of the home and the second with the conveniences and surroundings of the home, plus its relation to transportation and industry.

In connection with post-war housing, the British people appear to have made up their minds to face considerable losses in order to obtain improvement in conditions. As already stated, the various investigations which have been made show that the probable need of working-class houses in England and Wales alone is 500,000. If the calculation of authorities who have been employed to investigate the matter is correct, these houses will cost not less than $2,000 each, involving a total expenditure of $1,000,000,000. Should prices decline according to expectation, this will entail a loss to the Government, over the seven years that have to elapse before re-valuation, of about $234,375,000, and to the municipalities of about $78,125,000. These figures are based on the above estimate of $2,000 per house, and an estimate of $625 loss upon each house at the end of seven years.

Reference to the expenditures which have been incurred in England for constructive housing schemes give an inadequate impression of the huge expenditures that have been incurred in connection with the clearing of insanitary areas and improvement of slum districts. Many millions have been spent on this purpose,

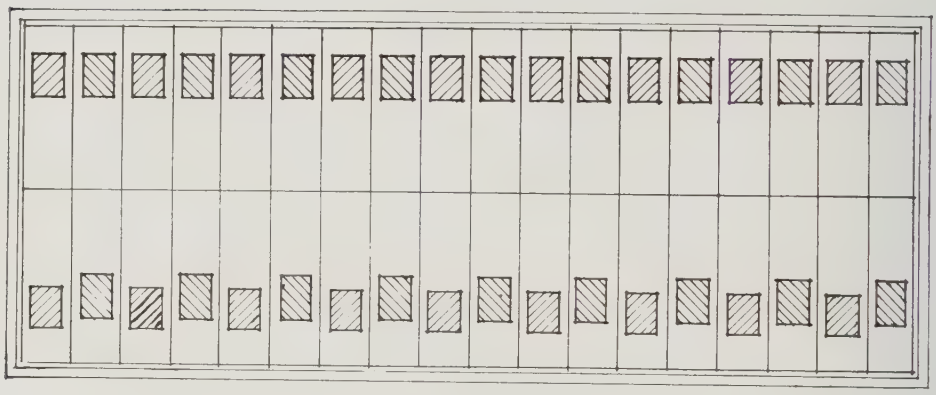
including about $15,000,000 in London alone. This is not the kind of enterprise, however, which affords any valuable example to Canada in connection with the present housing proposals. The time is certain to come, however, in the future, when the congested areas in the centres of large cities will require to be dealt with by expensive improvement schemes.

One of the principal lessons to be derived from housing policies in England is that the cost of getting rid of slums is so enormous that the expenditures, and even the loss of large sums in providing new houses on undeveloped land, is well worth while, from a purely financial point of view. Moreover, the value of housing and town planning schemes carried out on open land in the suburbs is very much greater than can be obtained by carrying out schemes involving the demolition and reconstruction of slum areas,—from the point of view of public welfare. It is hoped that in Canada we will not learn this when it is too late to get the benefit of the lesson.

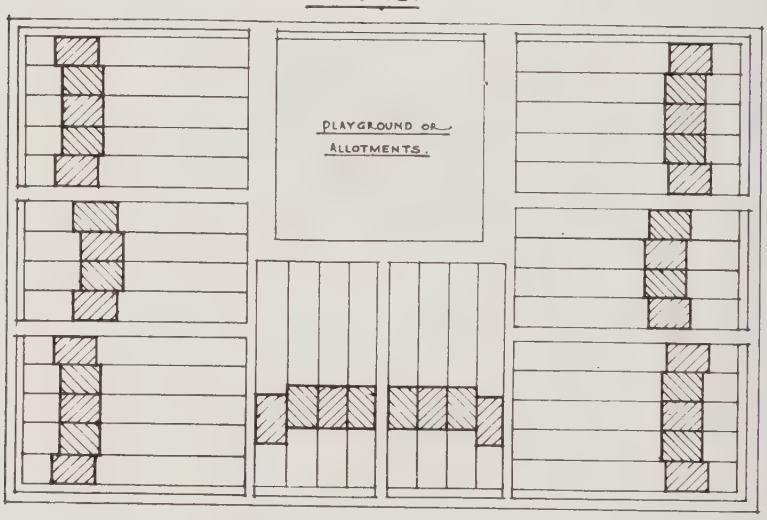
Appendix III.

ILLUSTRATING ADVANTAGES OF GROUP HOUSES.

SCHEME 'A'
AREA 144,000 SQ. FT. = 600' × 240'. LOTS, 33'-4" × 120'
CIRCUMFERENCE OF BLOCK 1680 F.T.
36 LOTS



SCHEME - 'B'
AREA 144,000 SQ. FT. = 480' × 300'. LOTS. 20' × 150'
CIRCUMFERENCE OF BLOCK 1560 FT.
36 LOTS.



The above two blocks are the same area, but B being nearer the square has a shorter circumference and therefore would need less paving and sewers. There are the same number of houses on each block and the back yards are about the same area. In B, however, the space between the houses has been eliminated, and after providing back yards for thirty-six houses, a playground of 130 feet by 140 feet approximately is left over. There would be a difference of cost of construction per house in favour of the group of about $300.00, and to this would be added a saving in cost of paving and sewers, as well as in upkeep and heating.

Appendix IV.

SUGGESTED REGULATIONS WHICH MIGHT GOVERN PUBLIC LOANS TO CONTRACTORS OR COMMERCIAL BUILDING COMPANIES.

(*a*) The rate of interest shall be the lowest current rate.

(*b*) The maximum loan shall be 70 per cent. of the total cost of an approved scheme carried out in an improved manner.

(*c*) The cost of the land and improvements (*i.e.*, pavements, sidewalks, water, sewers) shall not exceed 30 per cent. of the total value for loaning purposes.

(*d*) There shall be no encumbrance other than the loan upon the property.

(*e*) The maximum cost of land and building for a single residence shall be $4,500. (As costs of building decrease this amount might be lowered.)

(*f*) The term of the loan shall not exceed ten years.

(*g*) The form of cost accounting shall be standardized and the books of contractors or building companies receiving loans be open at all times to inspection by the municipal or Provincial authorities.

(*h*) The types and construction of houses and the plotting of the houses on the land shall be subject to approval by the municipal or Provincial authorities.

The following considerations are submittted as bearing upon this plan:

(1) That there is, apart from the responsibility arising directly from the war, a permanent responsibility for housing conditions, in addition to that which involves a charge on the public revenue.

(2) That this responsibility may be met by providing financial assistance at its cost to the State, accompanied by a measure of control over the building and over the land development.

(3) That such responsibility is limited to what may be termed essential housing, the suggestion being that a cost of $4,500, including the cost of land and improvements is at present prices a maximum for this purpose; such limitation being consistent with the accepted method of dealing with education whereby the cost of primary education is regarded as a charge on the State to a greater extent than that of higher education.

(4) That the financing by public authorities of such housing does not by implication include the feasibility or advisability of financing other enterprises—essential housing differing in its character from other commercial undertakings.

(5) That the housing problem has been for many years complicated by difficulty of finance as is shown by the current practice of discounting second mortgages. Elsewhere (e.g., New York State) there exist facilities for discounting such mortgages not available to builders in Ontario. Builders require their capital intact in order to proceed with further building construction, and the means to provide this may well be accepted by the Government in the general interest—provided such provision does not constitute a charge on the public revenue.

(6) That the effect of such provision would be to make possible an increased activity through the usual method of supply, and to encourage desirable commercial competition through established channels.

It will be seen, therefore, that provision is made for ample land where obtainable at a reasonable price.

Suburban land obtainable at $2,000 per acre will cost with improvements paid for about $27.50 per foot frontage. Under the above standards in respect of land when the total cost is $4,500, the land may be valued at $1,350, in which case the loan would be $3,150. If the land costs only $1,000 a house worth $3,500 might be built.

Appendix V.

EFFECT OF CAR LINES ON REAL ESTATE VALUES.

Investigation in Toronto and American cities, notably New York and Philadelphia, has demonstrated that the institution of transportation service, leads almost immediately to largely increased population in the territories served and largely enhanced real estate values.

Between the five years comprising 1910 to 1914, inclusive, the city of Toronto constructed approximately 18.28 miles of single track railway on Gerrard Street, Danforth and St. Clair Avenues and Bloor Street West. An examination of the Registry Office records shows that in the area within the city limits which one might reasonably estimate as being benefited by transportation, fifteen hundred and twenty-five representative property transfers were abstracted which show, in comparison with the sale figures of 1910, an increase of 134 per cent. in property values, integrated over the aforesaid period. During this term the average assessment per acre of the city shows an increase of approximately 66 per cent. Deducting this figure from the 134 per cent. leaves an increase in value of 68 per cent. attributable mainly to civic car line operation.

It may be argued that the widening of Danforth and St. Clair Avenues, respectively, is responsible for a portion of this latter increment, but in compiling these figures, we have been careful to ignore transactions covering properties fronting on the afore-mentioned thoroughfares, the values of which were without doubt largely augmented by reason of the widening. If the cost of the car lines, excluding the frontage on Gerrard Street, Danforth and St. Clair Avenues, had been assessed by local improvement over the properties directly benefited thereby, the entire levy, exclusive of added charges on account of the extended life of the bonds, would have amounted to about 6 per cent. on the original investment as of 1910, or 4½ per cent. upon the increase in value during the 1910-1914 period.

(Report to the Civic Transportation Committee on Radial Railway Entrances and Rapid Transit for the City of Toronto, 1915. Vol. I, p. 25.)

Appendix VI.

EXPROPRIATION OF LAND FOR MUNICIPAL PURPOSES.

Memorandum by the Bureau of Municipal Research, Toronto.

The following memorandum outlines the procedure for expropriating lands for municipal purposes in Ontario and the tables herewith give concrete examples showing how this method works out in Toronto. A short résumé of the methods of expropriation followed in Philadelphia and New Zealand are also given.

Ontario.

Under the Ontario Municipal Act, R.S.O., 1914, "The Council of a corporation may pass by-laws for acquiring or expropriating any land required for the purposes of the corporation, and for erecting buildings thereon, and may sell or otherwise dispose of the same when not required."

The corporation also has power to acquire or expropriate more land than is actually required if it is advantageous and may afterwards dispose of as much of it as is not required.

The owners of such land taken, or those injuriously affected, are to be compensated by the corporation.

The Assessment Commissioner* for Toronto outlined the powers of the city in this connection as follows: "In expropriating land the owner of same is compensated for the value of the land and for the disturbance to his business. If amicable settlements cannot be arrived at, the question of compensation is referred to the official arbitrator, who is appointed by the local government.

Toronto has also the power of excess condemnation by its right to condemn two hundred feet of land more than is necessary for the widening or extension on either side of the proposed street, and the whole of the lot when the same is entered upon in part, when such lot extends beyond 200 feet. The municipality in such case is required to sell such surplus land within seven years of its acquirement. The object, of course, is to allow the municipality to share in the profits of such improvement by sale of such land, thus reducing the cost to the ratepayers."

The City of Toronto has expropriated various lands for its needs from time to time. The tables given herewith list a few examples of such expropriations, showing the work in connection with which each expropriation was made, the amount paid by the city therefor, and a comparison of the same with the assessed value of such land.

This data was gathered from the Minutes of the City Council. The examples include as far as possible all the amicable settlements effected (in which the price paid and assessed value were given) over the whole year for the work mentioned. In some cases all the land mentioned was unimproved, as, for instance, in the case of the

*Address before the National Conference on City Planning, Boston, May, 1912.

City of Toronto—Expropriation

Reason for Expropriation	Year	Property	Buildings (if any)	Price Paid	Assessed Value	% of Assessed Value on Sale Price	Remarks
Duplex Avenue Extension..	1915.....	No. 1	House (2-storey and attic) shop	$ 7,000 00	$ 3,800 00	54.3%	
" " ..	"	No. 2	2-storey detached house and garage	10,725 00	4,800 00	44.6%	Garage was removed by owner.
" " ..	"	No. 3	None.....	1,320 10	690 00	52.3%	
" " ..	"	No. 4	None.....	1,725 00	900 00	52.2%	
Total.....	.....	.....	.....	$20,770 10	$10,190 00	49.06%	
West Toronto Drainage System.	1915.....	No. 5	None.....	$6,665 00	$807 00	12.1%	Great difference explained by the department saying "at time of assessment property practically inaccessible hillside land. No real estate sales in neighborhood to guide. Assessor astray in his judgment. Positive lands will be sold afterwards at considerable advance."
" "	"	No. 6	None.....	4,125 00	1,945 00	47.1%	
" "	"	No. 7	None.....	8,550 00	3,200 00	37.4%	
" "	"	No. 8	None.....	2,763 75	1,256 25	45.4%	Does not include $97.50 paid to architects for plans of proposed dwelling house.
" "	1916.....	No. 9	None.....	5,362 00	2,211 66	41.2%	
Total.....	.....	.....	.....	$27,465 75	$9,419 91	34.3%	

City of Toronto—Expropriation—Continued

Reason for Expropriation	Year	Property	Buildings (if any)	Price Paid	Assessed Value	% of Assessed Value on Sale Price	Remarks
Teraulay Street Extension.	1915	No. 10.....	House	$ 3,350 00	$ 1,600 00	47.7%	
" " "	"	No. 11.....	None	$25,200 00	7,700 00	30.5%	Lot 92 ft., 6¼ in. in width. City took easterly 28 ft.
" " "	"	No. 12.....	Large detached brick bldg., brick stables and other outbuildings	$70,000 00	$35,346 00	50.4%	
" " "	"	No. 13.....	2-storey and attic brick building..	$ 5,552 00	$ 3,458 00	62.3%	City took west 20 ft., 10 in. of lot 52 ft., 3 in. wide, involving destruction of building.
" " "	"	No. 14.....	Ditto	$13,000 00	$ 7,000 00	53.8%	
" " "	"	No. 15.....	1-storey	$ 268 00	$ 192 50	71.8%	Lot 50 ft. wide. City took 2 ft. 8 in. on Yorkville, narrowing to a point at end of lot, involving alterations to gate, shed and fencing.
" " "	"	No. 16.....	2½-storey brick building	$10,500 00	$ 6,000 00	57.1%	
" " "	1916	No. 17.....	Semi-detached house	$ 9,000 00	$ 4,865 00	54.0%	
" " "	"	No. 18.....	"	$ 9,000 00	$ 4,910 00	54.5%	
" " "	"	No. 19.....	Pair 2-storey roughcast bldgs.	$ 7,200 00	$ 4,100 00	56.9%	
Total.....				$153,070 00	$75,171 50	49.1%	
Cleveland Street Extension	1918	No. 20.....	None	$ 687 50	$ 450 00	65.5%	
" " "	"	No. 21.....	None	$ 3,795 00	$ 2,450 00	64.6%	
Mt. Pleasant Ave. Extension	"	No. 22.....	Occupied by owner as builder and contractor.	$ 5,775 00	$ 3,025 00	52.4%	
Day Ave. Extension	"	No. 23.....	None	$ 875 00	$ 575 00	65.7%	
Civic Car Barn Extension..	"	No. 24.....	None	$45,500 00	$22,200 00	48.8%	Amount paid in City of Toronto 5% bonds running for period not exceeding 10 years. Bonds accepted at par.
Total.....				$56,632 50	$28,700 00	50.7%	

West Toronto Drainage System, and here the assessed value of the properties taken averaged 34.3 per cent. of the price paid for such properties. In the Terauley Street Extension most of the property was improved and the assessed value averaged 49.1 per cent. of the price paid. It must be borne in mind that these were amicable settlements and costs which would probably have been borne by the city in case of arbitration were avoided.

In this connection, the Assessment Commissioner for Toronto in his report for 1912 remarked: "Properties are changing hands at prices much above even the present assessment and we find that in almost all cases where properties are required for street extensions, widenings and other civic purposes, the amount of compensation asked or demanded by the owners for the lands taken is greatly in excess of the assessment and this after making due allowances to the owner for forcible taking."

A reason for the disparity between assessed value and the price paid under expropriation powers is given by Banister Fletcher in his book on "Valuations and Compensations" (4th edition, 1913). He takes the definition of a forced sale or expropriation from a legal decision which states: "The true and admitted basis of valuation for compensation is not the value to the purchaser but the value to the vendor," and goes on to say: "This is only right and proper: the vendor is asked to sell, and not merely asked, but required, *nolens volens,* to sell, and the true estimate of value is the value to him, or her, who is compelled to part with the land; to which is usually added 10 per cent., the present accepted percentage. Formerly this was higher."

Philadelphia.

By an Act of Assembly, 1911, a Board of Viewers was created, consisting of nine members appointed for three years by the Court of Common Pleas. Upon petition. the Court appoints a Board of View, of three members from the Board of Viewers, one of whom shall be learned in the law, for the purpose of assessing damages, or benefits, if any, occasioned by the laying out, opening, grading, altering, widening, vacating, or construction of roads, streets, highways, sewers, or bridges, or occasioned by any other appropriation of land by municipalities, and of other corporations having the power of eminent domain, such Board of Viewers to report to the Court thereon.

The Board of Viewers has full charge of all condemnation proceedings, and the appeal from their findings is made to the Common Pleas Bench.

The laws themselves do not define the technique of assessing damages or benefits, but merely create the body itself and define the general powers. The whole matter, in short, is left largely to the discretion of the Viewers.

The Bureau of Municipal Research, Philadelphia, in a bulletin issued June 10th, 1915, in connection with the expropriation of land for the Parkway, remarked as follows: "The City Solicitor dissents from the awards made recently by the Board of Viewers on a number of properties along the Parkway and proposes to appeal therefrom.

In connection with the properties for the Parkway *over 300 owners sold to the city at private sale on the basis of the valuation of 1909, plus 10 per cent.* What better test than that to guide the Viewers in determining the market values? Yet the Board of Viewers is making its awards on a different basis and at greatly increased valuations (from 75 per cent. to 120 per cent. in some cases)."

New Zealand.

All persons suffering damages in connection with expropriations for municipal works, etc., are entitled to compensation. If amicable settlement cannot be arranged the matter is referred to a special compensation court, consisting of three members—each party having one member, and a magistrate or judge being the third member.

In determining the amount of compensation to be awarded the Court takes into account the value of the land taken and extent to which any lands in which the claimant has an interest are, or are likely to be, injuriously affected, and also, by way of deduction from the amount of compensation to be awarded, any increase in the value of such lands likely to be caused by the execution of such works.

In determining the amount of compensation to be offered the Government Valuation is almost always taken into consideration, but a special valuation is also usually made.

The "Government Valuation" referred to above is that made under "The Valuation of Land Act, 1908" (a consolidation of the 1896 Act), which provides a system by which all valuations required by government departments and by local authorities shall be made by valuers employed by the State at fixed salaries and responsible to the government alone.

The valuations are used, among other things, *for the guidance of the Public Works Department when acquiring land for State purposes and also* as shown above *for local expropriation purposes.*

Appendix VII.

THE HOUSING PROBLEM AND ITS SOLUTIONS.

By MR. ALBERT H. LEAKE.

(First Prize Essay).

Introduction.

The future of this Province and the happiness of its people, both morally and materially, depend upon the progress of its industries. That progress, in its turn, depends upon having a healthy, vigorous, and contented body of workers. This cannot be brought about unless the conditions under which those workers live are beautiful and sanitary; in other words, if the state is to become great the people must be afforded facilities to provide for themselves homes of this character. The provision of these facilities constitutes the so-called housing problem. It has recently received so much attention from the public and the press that one might almost conclude that it was a new and important discovery.

The problem is, however, by no means a new one. In 1911 the Medical Health Officer for the City of Toronto made a report on the slum conditions of that city, the main results of which were the partial improvement of some dwellings and the securing by land speculators of control of all suitable building land for miles around the city, thus rendering the acquisition of low-priced land for workmen's dwellings very difficult if not impossible. In the same year Mr. Henry Vivian, M.P., addressed a large congress in Convocation Hall, on "Housing," and Earl Grey, throughout his period of office took an active interest in the question; owing, however, to the apathy of the public, the lack of leadership, and of efficient organization nothing was done and the problem has grown to its present dimensions. The conditions existing in Toronto are present in a lesser degree, of course, in most of the smaller towns, and are not unknown even in rural districts. The war is not the cause of the present shortage of houses, it has only aggravated it, and in fact it may be said that the present agitation is but an acute manifestation of a chronic disease.

Magnitude of the Problem.

Notwithstanding the prominence that has been recently given to the subject it is very doubtful whether its magnitude and importance is yet fully comprehended. Many housing schemes have been carried out as though they were isolated phenomena and thus have failed of their purpose. There has always been a housing problem since man first made houses, but it was not until the building of the industrial towns that it reached dimensions which have made it the most serious menace to the vitality of the race that the world has yet known. The problem is not merely a sufficient number of houses in the shortest possible time. Difficult as that may be it is a comparatively simple problem compared with the real problem of providing homes of the right kind within the means of the working man, and which shall prove a permanent betterment, and not a detriment to the community.

The housing problem has many sides; it is not only an economic problem, it it not only a question of supply and demand, and of furnishing a sufficient number of homes. The question is increasingly recognized as bound up with the solution of wider problems with which it is seldom formally associated. It cannot be satisfactorily solved unless adequate consideration be paid to the following factors:

1. Satisfactory legislation and enforcement of the law.
2. Building construction and community sanitation.
3. Transit, taxation and city planning.
4. Satisfactory organization, federal, provincial and local.
5. Financial.
6. Adequate surveys.
7. Education of the public.

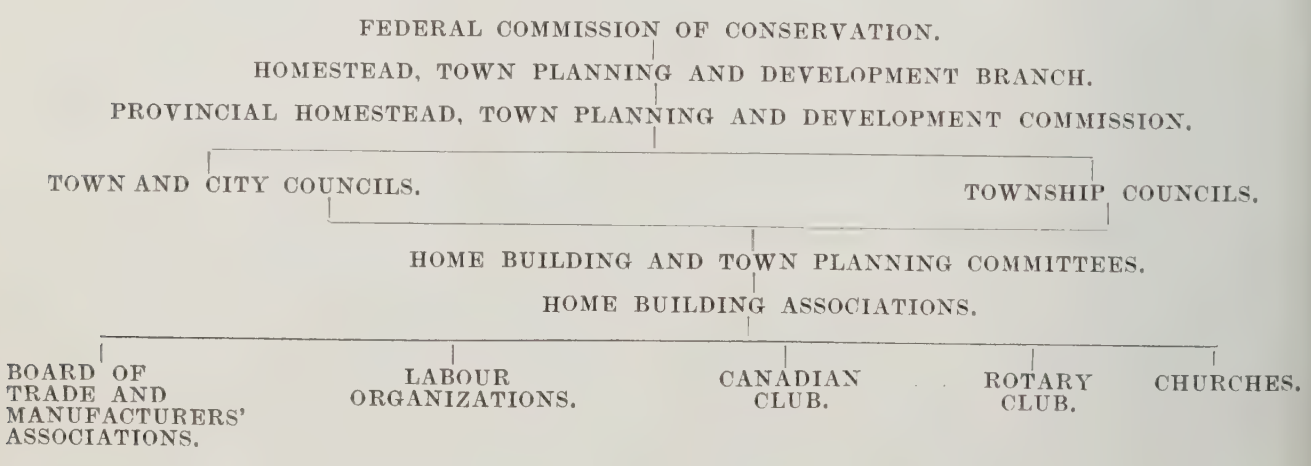
The problem is national in its scope, and its satisfactory solution will depend on the widest possible view being taken, and will call for the active sympathetic consideration and co-operation of federal, provincial, municipal and rural authorities.

Organization and Co-operation.

In attempting to solve the problem there are two methods of attack. The first is the adoption of measures which have for their object the permanent solution of the problem, and the second is the adoption of palliative measures designed to deal with what is hoped to be a temporary situation. These two methods are perhaps not mutually antagonistic, as if due care be exercised the palliative measures may be such as will fit into, or at least, not be opposed to the wider scheme. Whether it be determined to permanently settle the question, or to adopt merely palliative measures it is essential that there should be efficient organization and co-operation.

If English experience has any value at all for us in this matter it seems to point clearly in the direction of the nation itself shouldering a burden which has become too heavy to be carried by individual communities alone. The more this question is investigated the more evident it becomes that it is a matter for joint action. Only in this way can it be satisfactorily solved. Complete articulation must be preserved and every effort made to prevent overlapping and working at cross purposes.

The articulation of the different bodies necessary to handle the problem effectively may be shown somewhat as follows:



All organizations should contribute to the funds required according to previously determined rates—the greater part being borne by the Federal Government. The branch of the Federal Government dealing with this matter should be an expert and advisory board ready at all times to assist the Provincial Commission. The Town Planning Act drafted by the Commission of Conservation, or such modifications of it as may be desirable, should be adopted by the Provincial Legislature and wide powers be given to the Provincial Commission in regard to town planning, expropriation of land, purchasing supplies in wholesale quantities, setting of standards, loaning of money, fixing rates of interest and repayment, passing by-laws, clearing out slums, approving the constitution of housing companies, etc.

A precedent has already been set. The Hydro-Electric Commission has demonstrated the ability of such a body to handle "big business." The success of this Commission should clear away all doubts as to the advisability of appointing such a commission to deal with the housing problem.

In smaller towns one home-building association will probably be found sufficient. In the larger cities several will be necessary, but even when this is the case it may be found advisable for them all to unite in the purchase of material in order that they may reap the economy resulting from purchasing in train load lots. A healthy rivalry may well exist between the different companies.

The whole Province is packed with energy. It is only necessary that this energy should be stirred up and organized in order to accomplish the tasks of community improvement demanded by a healthy and progressive democracy.

The Financial Aspect.

It has been said already that this is a problem which concerns the whole nation and therefore the whole nation should participate in it. The Federal Government has already recognized this principle in the case of agriculture as it makes a large annual grant to each Province, under the "Agricultural Instruction Act." There is this difference, however; in the case of agriculture the money is a direct grant while in the case of housing all that is proposed is a loan, at a low rate of interest. The working man is not an object of charity and does not wish to be a receiver of doles. He generally wishes to pay for what he gets. Housing schemes that have been conducted on a philanthropic basis have not generally proved successful and are not to be recommended.

The work of making more ample provision for healthful homes for the people by the use of public funds or credit has been going forward without cost to the public treasury in Finland, Norway, Sweden, Denmark, Holland, Belgium, France, Italy, Spain, England, Scotland, Ireland, the six Australian States, New Zealand. Argentina, Brazil, Chili, Cuba, Austria Hungary, and Germany.

In England, Scotland and Ireland, it has long been the practice of the government to render financial assistance on easy terms to planning and housing projects, through the medium of the Public Works Loan Commission. One half the value of the cottages in Letchworth, the first Garden City, was obtained on loan from this Board for thirty years at three and one half per cent. The Government of Great Britain has expended $700,000,000 in one year to house the workmen. In addition to this amount many millions of private capital have been wisely invested in this manner. While a large portion of this has been devoted to what is called "war-housing," it is vital to the process of re-construction after the war. The British Government early in the war abandoned its policy of temporary structures, and nearly all its building is now of a permanent character.

The Secretary of the American Civic Association states that $50,000,000 has now been provided in the way of loans with which to make possible the building of low-cost sanitary houses for the crowded working classes in Dublin—a remarkable feat in view of the continuance of the war.

In the United States $10,000,000 has been set aside for the erection of thousands of houses in the vicinity of Hog Island shipyard, and the total amount appropriated by the government for housing purposes up to the present is $150,000,000. The houses built through the aid of this fund are to be largely of a permanent character. Modern improvements, wholesome city attractions and all the amenities are to be provided. It is proposed that, after the war, these communities shall be handed over to a housing corporation for management and control, and adequate measures are being taken to secure the use of the unearned increment for the people.

It will thus be seen that the principle of government assistance has been well established, that it is no longer an unsuccessful experiment, and that many other nations regard this as the most satisfactory way of solving the problem. In Great Britain there is also a plan on foot to provide for the spending of something like five billion dollars on a million houses on small plots of ground in the country, so that the men returning from the war may be immediately absorbed into the life of the nation.

Canada is practically alone amongst progressive nations in ignoring this question and in failing to take effective action.

The plan for Canada might be somewhat as follows:—

A fund of (say) $50,000,000 should be set aside for the purpose of loaning to the Provinces under certain well defined conditions. This fund should be administered by a separately constituted body known as the Public Works Loan Board or by the Homestead, Town Planning and Development Branch of the Commission of Conservation to which enlarged powers should be given. The proportion of money available for each Province should be allocated on the basis of population as is now done in regard to the grant given under the Agricultural Instruction Act.

In addition to the loans available from this fund each Province should be required to contribute (say) one half the amount received from the Federal Government, and each town or municipality receiving aid from the fund should be required to add one-half the amount loaned by the Provincial Government. In this way a fund of $87,500,000 would be available in the Dominion for loaning under proper conditions to authorities wishing to undertake approved housing schemes. Ontario's share of this federal grant would be approximately $18,000,000 and with a contribution of $9,000,000 from the Provincial Government, and $4,500,000 from local authorities a Provincial fund of $31,500,000 would be available.

As in Great Britain, no money should be loaned on mere temporary schemes, and all schemes should conform to the newer principles of town planning and be subject to the approval and supervision of the experts employed by the Federal and Provincial Commissions. Any cost incurred in the administration of such funds, and the employment of experts in town planning and home building would be more than offset by the higher type of efficient national life—physical, mental and moral—that would result from the establishment of conditions such as now exist in the various garden cities and suburbs that have been established.

Home Building Associations.

The general concensus of opinion seems to be that only in exceptional cases should the authorities themselves undertake the actual building. That should be done by home-building corporations established under proper safeguards and control. The term "housing" is too patronizing. It suggests the warehouse, and the herding of the population, and moreover, does not convey the idea that is intended. It is the home, the individual home that we are seeking to get and "home-building" or "homestead" would be a much better term. In England the Building Societies are very common and many thousands of people have bought homes through their aid. The shares are generally one hundred pounds and any fraction may be taken. Monthly contributions are made and when a sufficient sum has been subscribed this amount may be paid on a house, and the society takes care of the mortgage, provided its building inspector approves of the purchase. If necessary, additional shares may be taken up and the payment kept up on the original basis until the mortgage is cleared. The shares mature in twelve and a half or sixteen years. None of these societies are organized primarily for profit.

On this continent such societies have not attained the importance they have in Great Britain and Europe. In July, of 1914, the Massachusetts Homestead Commission made an investigation, and found only 26 societies engaged in providing homes for working men, but not all of even this small number offered the opportunity to purchase. It is believed however that many other such companies exist, but as there is no organized central clearing house of information there is no means of ascertaining their names or activities.

The present method of providing houses cannot be regarded as satisfactory, and the situation has arisen largely owing to speculative profits and lack of collective action. The individualistic machinery of peace times has been thrown on to the scrap heap, and if we are wise enough to learn the lesson we shall make use of collective action in order to solve our housing problem.

It is necessary that various home-building associations should be formed, and if the money is made accessible by Government loans there will be no insuperable difficulty in organizing them. Each society formed must fulfil some or all of the following conditions:—

1. Money must be available at a reasonable rate of interest.
2. All profits should be made available for community improvement.
3. Wholesale operations, permitting great economies in building and planning.
4. Advanced methods in community and town planning, insuring the provision of many social needs, such as playgrounds, allotment gardens, open spaces, community buildings, etc.

The Massachusetts Homestead Commission recommends four types of these associations, which aim to meet most of the conditions above enumerated.

In selling houses to working men every possible opportunity should be given to purchase economically. The terms of sale should be made easy, extending over a long period. Selling arrangements should be easily and thoroughly understood. The confusion resulting from details such as interest, taxes, insurance and payments on principal should be avoided by working out stipulated required sums payable in the same manner as rent. In addition to this it is wise to provide some form of insurance which will protect the interests of the worker in case of sickness, death or a slack working period.

The success of the home-building company depends on the following factors:—

1. Business methods and initiative.
2. Adequate capital.
3. Co-operation with building interests.
4. Acquisition of land without much, if any, speculative profit.
5. Expert service in planning and building.
6. Wholesale methods of construction.
7. Factory methods of production, sale and management.

The Land Question.

Houses cannot be built in the air. We must have access to land, and, broadly speaking, the land question is the root of not only housing problems, but of all social problems both in rural and urban territory.

There is a certain amount of land around almost every town and city in Ontario ripe for development. For example there is a huge tract of vacant land lying between St. Clair and Eglinton Avenues, west of Bathurst Street, Toronto, all owned by one syndicate, capable of accommodating a large number of people under the most favourable conditions. Instances of such kind, varying in degree can be found on the outskirts of many of our towns.

During boom times land is subdivided for building purposes for a radius of from three to ten miles outside city boundaries. Take for example the cities of Ottawa and Hull with 123,000 inhabitants. The Commission of Conservation has studied these two cities, and from its report the following particulars are taken. The present cities would occupy five square miles if the density were forty people to the acre. It is estimated that the population of these cities will increase to 350,000 in fifty years, and a total area of fifteen square miles will provide for this ultimate population with a density of forty people to the acre. But the subdivided area consists of sixty-five square miles of territory only a small part of which is likely to be required for building in a gradual way after fifty years. Of this sixty-five square miles, 41,600 acres is lying idle and uncultivated because it is subdivided into small lots, and held by absentee owners in the hope of securing speculative profits which are not likely to be realized, and which the owners have done nothing to earn. This land contributes nothing to the public good and little to the public revenue.

So long as we allow the individual to appropriate the community created increment, generally not even taxing him on it, we give him that with which he increases rent. He has capitalized that which the people produced and should have. This is the greatest single factor in the housing problem and to really solve the one we must solve the other. By the combined system of the assessors of letting off easily the holders of idle land, and taxing heavily the owners of improved land, covering as well, all the improvements, the holding of idle land is encouraged, and the building of homes, factories, and mercantile establishments is discouraged. Holding land out of use for a speculative increase is not the way to housing reform. Land is fixed in amount—unlike automobiles, baby carriages and other articles. If a speculator holds it, no one may make more land to satisfy the demand. When the profits of land speculation are taken by the state for public purposes land speculation will become an unpopular occupation.

Let us once establish the principle of taxing the land on its economic value, that is its value for use, and correspondingly decrease the taxes on improvements

and there will be such a competition on the part of land for use that our entire situation will be changed.

A tax on speculative profits and the unearned increment levied at the time property is transferred would act as a deterrent to speculation, and return to the community a large part of the socially created values. When we wish to obtain the value of land it is customary to appeal to real estate operators, but they are unreliable valuers from a community point of view, and their experience is injurious rather than helpful to sound judgment.

In the case of those new and charming towns which the English Government has built to house munition workers, the unearned increment has been carefully eliminated. The land is taken at a pre-war valuation and the right is reserved of taking more land adjacent thereto at the same speculator-defying terms.

The economic use of land in the rural parts of the Province, and the prevention of its unhealthy use in crowded cities are two of our most urgent problems. The various governments as owners and developers of land should eliminate from their policies all that tends to promote speculation. It is said that "some of the worst examples of speculation in Canada have been initiated by governments and largely supported by governments. The present methods of land transfer and settlement still give every encouragement to speculation."

This subject has received attention from previous commissions. The Commission appointed by the Ontario Government to report on unemployment made the following statement: "The question of a change in the present method of taxing land, especially vacant land, is, in the opinion of your commissioners, deserving of consideration. It is evident that speculation in land and the withholding from use and monopolizing of land suitable for housing and gardening, involve conditions alike detrimental to the community and to persons of small means. Further, land values are peculiarly the result of growth of population and public expenditure, while social problems greatly increase as population centralizes, and the relief of urban poverty calls for large expenditures from public and private sources. It appears both just and desirable that values resulting from the growth of communities should be available for community responsibilities. Wisely followed, such a policy involves no injustice to owners of land for legitimate purposes; and the benefits which would follow the ownership and greater use of land by wage-earners justify the adoption of measures necessary to secure these objects as quickly as possible."

Much of the success of the garden cities and suburbs, later proposed, will depend upon the conditions under which land can be secured, and it is urgently necessary to our future progress that the land question should at once receive the most careful attention of our legislators.

A Permanent Solution.

This question cannot be solved permanently in five minutes, nor in five years, and there seems a danger that in the apparent great anxiety to do something, mistakes will be made that cannot be easily rectified. The first thing required is a definite plan and goal to be aimed at. This is well illustrated in the method of procedure adopted in building up the University of Saskatoon. Plans for forty years ahead were adopted. A large area of ground was laid out, the building material decided upon, and the complete scheme outlined. It was not possible nor was it intended to carry out the whole plan at once. The buildings are to be

erected as needed but every building will fit into the general scheme and the final result will be a harmonious whole.

In the development of our cities there is now shown a marked tendency for large manufacturers to move from congested urban centres to rural and semi-rural districts. The general improvement in railway systems outside large cities, the development of radial railways, and the increased pressure of taxation are all contributing to this new movement. This was the chief argument used to secure the establishment of the First Garden City, (Letchworth) in England. In the United States the increase of workers in thirteen large cities was only 40.8 per cent. in ten years whereas it was 97.7 per cent. in the semi-rural zones surrounding these cities, during the same period. The same movement is evident in Canada, and we find industrial suburbs and villages growing up in the open country around the large cities of Montreal and Toronto, and a more rapid increase of population in the outer than the nearer suburbs. A striking example of this is Ojibway, the site selected by the United States Steel Corporation in a purely rural district outside of Windsor to erect its plant and build its own town.

Factories and homes for employees in factories from the point of view of the city as a whole are best placed on the outskirts, mainly for three reasons. (1) the city needs its centrally located land for retail business and commercial purposes. (2) the streets of the city should be relieved as far as possible from the unnecessary hauling of raw material and finished products; and (3) homes built on the outskirts afford greater facilities for healthful life than tenements and rented houses in congested portions of the city. It is largely this point of view that has led to the establishment of the outlying industrial zones so common in European cities.

With reference to the problem of the factory and the home Mr. John Nolen draws the following conclusions:

1. New factories in their own interests and in the interests of all others concerned should locate on the outskirts of the cities, or establish independent industrial centres wherever practicable.

2. That existing factories in cities should be encouraged as opportunity offers to remove to more open situations.

3. That employers and employees should co-operate in a social and democratic way to create a community on the outskirts of cities near factories each doing their part to make the local community healthful, convenient and attractive.

Residential and industrial decentralization if properly carried out will solve the problem of the housing of the people. There are in existence enough examples of complete and partial success in the establishment of garden cities, suburbs and villages to point the way to a satisfactory solution. The most modern developments of the garden city idea are the war towns at Eltham, Gretna, Rosyth and other places in the British Isles. Many English towns after thorough investigation have come to the conclusion that the garden city or the garden suburb or village is the only way to solve the problem permanently. For example, the Bristol Town Council have adopted a scheme for building 3,000 houses in five garden suburbs, and instructed the housing committee of the council to report upon the probable cost of 8,000 additional houses subject to the approval of the Local Government Board.

Why must we buy all our experience at such a cost? Why cannot we make use of the proved conclusions of other authorities and make such adaptations as are called for by our own peculiar needs?

The movement in England started with the publication of a book in 1898, by Ebenezer Howard, "To-morrow a Peaceful Path to Real Reform." A third edition of the book was published in 1902, under the title of "Garden Cities of To-morrow." "My proposal is" says Mr. Howard, "that there should be an earnest attempt made to organize a migratory movement of population from our overcrowded centres to sparsely settled rural districts." An area of 6,000 acres "which is at present purely agricultural" was to be "obtained by purchase in the open market at a cost of forty pounds per acre or 240,000 pounds." The estate was to be held in trust "first as a security for the debenture holders and secondly —for the people of Garden City—which it is intended to build thereon." He proposed in fact "to marry town to country that from the union may spring a new hope, a new life, a new civilization."

Letchworth, the first Garden City, though hampered by lack of capital and injured by a cheap cottage exhibition has made remarkable progress. It has now a population of 10,000 people and all the amenities are provided.

The location of industries has been encouraged and the aim has been always to have such a grouping of the different trades and occupations that both men and women, young and old, will find regular employment. This policy has developed an all-round labour market, which although smaller than that of London thirty-four miles away, presents similar advantages.

Garden cities and suburbs, if properly managed can be made to yield a safe six per cent. investment. The annual report of First Garden City, Limited, for the year ending Sept. 30, 1915, includes a full war year. The total net profit on the revenue account for the year was 16,689 pounds, and after the payment of interest on borrowed money, there was a net profit of 5,822 pounds, which with the sum of 7,677 pounds brought forward makes a balance of 13,000, nearly seven per cent. on share capital.

The best known suburb of this type is Hampstead Garden Suburb. It consists of 320 acres and was the first example of town-planning in England that observed the economic requirements of the housing problem as well as hygienic and artistic ideas founded on sound business principle. The strict limitation of houses to the acre, the grouping of the principal buildings around a central area, the generous provision of open spaces and playgrounds, the preservation of every natural feature of aesthetic value, the lay-out of the roads, the architecture of the houses, all show that these most important concerns have not been left to the caprice of the speculative builder.

The Hampstead cottages are within four miles of the centre of London and very many of them rent at $2 a week. Every one of them is worth living in. If this can be done within four miles of London surely something of the same kind can be done for, say three or four dollars a week within four miles of our large towns and cities.

The village of Port Sunlight is located about six miles from Liverpool and now comprises about 444 acres, of which about 231 acres are devoted to the houses, parks, gardens, and public improvements. One of the striking features of the village is the variety of its architecture, and the most diversified styles are to be found side by side. A maximum of ten houses to the acre has been adhered to. The houses are of two different types and rent at $1.25 and $1.75 per week, respectively, and this rental includes rates, taxes, repairs, and maintenance. The village is essentially a part of a great manufacturing concern. Sir William Lever its founder calls it "profit sharing" and the rents are only sufficient to pay for de-

preciation and upkeep. There is no return on the capital invested, except in the greater efficiency of the workpeople in the factory. Only employees of the factory are allowed to live in the village. Another feature of the village is the gardens, in which the people take great pride and delight. Some of the tenants produce enough from them to pay the rent. Allotments rent at $1.25 a year. While none of the tenants own their homes, yet the village offers suggestions which many of our large manufacturers might well follow.

Bourneville, another type of garden village, was founded by Mr. G. Cadbury. In this village, residence is not restricted to employees. It is owned by the Bourneville Village Trust, not connected with the Cadbury business and would go on just the same if no factory existed. It seems to duplicate on a small scale the conditions in Belgium before its devastation, with labourers living in houses with gardens, outside of congested centres and every man having two trades, his regular day labour and his agriculture.

The most brilliant examples of garden cities are those built within the last three years by the British Government in pursuance of its war policy.

Well Hall, Eltham, Kent, is situated about one mile from Woolwich and consists entirely of permanent dwellings. There have been built 1,600 houses, all of the best material available, which were occupied within ten months.

Another modern housing scheme is begun at Rosyth, Scotland. This plan is being carried out by a housing company promoted by the Local Government Board of Scotland. It is proposed to make Rosyth a model garden city for Scotland. The houses have been built with hollow brick walls covered externally with cement rough-cast, and with slate or tile roofs. The plans have been standardized according to seventeen different types, and variation in external appearance has been secured. The house most favoured has three bed-rooms, a large living room, a kitchen, a bath-room and other conveniences. The cottages have been built at an average density of twelve per acre with a maximum density of about sixteen. A large area of land has been laid out in garden plots, while a public park of about forty acres has been provided in the centre of the development.

The movement is now spreading to the United States. A modern garden suburb near North Billerica, Mass., has for the first time in the United States combined all the elements of the English garden village to meet the needs of workmen earning from $12 to $20 a week. Development has already begun and the company has met with some measure of success in the first stages of its work. A portion will be turned over to a co-partnership society for development by that method. In another section houses will be sold outright on instalments. In a third section houses will be built to rent, and in a fourth district the company will construct special buildings as the demand arises.

Only six out of the fifty-six acres are at present developed and yet four per cent. is paid on the investment. Lack of capital is hindering rapid extension.

Developments are taking place in other parts of Massachusetts. A feature of these developments is the opportunity that is to be provided for the teaching of agriculture to city dwellers in order that they may make the best use of the "small houses and plots of ground" to be furnished under the auspices of the Massachusetts Homestead Commission.

Yorkship village near Camden, N.J., promises to be a model for the United States. The industry which called this village into being is that of the New York Shipbuilding Corporation. The Government of the United States is legally the holder of a controlling interest in the property (since as the lender of most of the

money, it holds a mortgage over the development) but the active care and immediate responsibility for the construction of the village is invested in the Fairview Realty Company, an organization formed for the purpose. The area selected for immediate subdivision comprises some 200 acres of which a little less than half will be developed at once. Nine hundred and seven houses are now under contract. These consist of five, six, and seven rooms. The completion date under the first contract falls in September, 1918, so that by that date we should be able to point to a phenomenon new on this continent—some 1,400 workmen constituting with their families a town of five thousand persons living under conditions which a National Government alone made possible.

It must be remembered that the solution of the problem is closely related to transportation facilities. When a single street car fare will carry a passenger to and beyond the city limits in any direction, building in the suburbs will be given a great impetus. In the case of Toronto, adequate transit must soon follow the acquisition of the street railway lines by the city and housing programmes should be based upon this development of the near future.

Where land is available outside cities and there is no street railway line to the property, a service of motor buses might be organized. In London more than 3,000 of them carry over 500,000,000 passengers annually. Buses are now operated in New York, Washington, Detroit and Utica, so it will be seen that they are no longer an experiment. They possess flexibility of movement and flexibility of route. Four inches of snow can tie up a street railway service while in Ottawa a motor bus line was operated successfully through eighteen inches of snow. With the development of garden suburbs and a demand created for transportation it is reasonable to suppose that an effort will be made to supply that demand. The gradual extension of hydro-electric power will render this easier. Transportation facilities should not be provided for new districts without protecting the cheap land, thereby opened up, from inflated prices.

The Provincial Commission when appointed should not, of course, concentrate its attention exclusively upon cities and towns. The need for improvement in housing accommodation and town planning is greater in some villages than in many towns. The policy of isolated farm settlements has not made rural life attractive and the time has come to consider the establishment of agricultural colonies and villages, provided at least with some of the amenities to be found in towns and cities. This subject is fully discussed in the report of "Rural Planning and Development" by Mr. Thomas Adams, issued by the Commission on Conservation.

A vital factor in the consideration of this question is the cost of materials and construction. Mr. Grosvenor Atterbury, architect, of New York, says: "It would be difficult to find a practical art which throughout all the centuries of man's civilization has made slower progress than the art of home building. It is a curious fact that scientific and co-operative principles have been applied to almost every item in the poor man's living account but the second largest single one—that of his housing. His bread, his clothing and his watch are factory products, largely guaranteed sometimes by Government. His house is usually 'custom made' and bought at the mercy of a speculative builder."

The majority of estimates that have appeared recently in the press have had to do with the building of single houses. No manufacturer proceeds on that plan. We need investigation and research into all the factors that contribute to the cost of home-building. It would seem that reduction in cost might be

brought about very largely by the adoption of the standardization principle which could be applied to concrete, wood or other material. The Russell Sage Foundation is conducting such research work. The scheme is to do for the labouring man's home what Ford has done for the automobile with certain additional conceptions relative to educational, hygienic and aesthetic purposes. Most promising experiments are now being conducted in the use of poured concrete.

All considerations point to the conclusion that the most scientific solution of the problem lies in the direction of garden cities and suburbs. It seems, however, to be the aim of all our cities to crowd as many people within their boundaries as possible, in order that they may boast of the size of their population and exult over other cities where the population is not so large and does not grow so quickly.

There should be no difficulty in starting a garden city or at least a number of garden suburbs in Ontario, but such schemes can only succeed when backed by adequate capital, and if the main objects of the Garden City Association are rigidly adhered to. These objects must not be relaxed in order to secure some speculative purpose. This temporizing, if allowed, will inevitably end in failure and set the movement back for many years.

Palliative Measures.

In the great anxiety to get something done quickly there is grave danger that the wrong thing will be done, the result of which will be the perpetuation of many of the evils of which we complain. Various cities and states when confronted with the housing problem have tried palliative measures. Particularly unfortunate elsewhere has been the experience with the three-family apartment which rapidly degenerates into a tenement. It will take some time to work out a permanent solution, but it would be a blunder which could not be rectified if in the meantime rows of unsightly tenements, built with no regard for the amenities were to be rushed up in localities where individual homes are still the rule. Housing reformers the world over are agitating for the removal of the "three Decker."

It seems to be the tendency whenever there is a shortage of houses, to propose the tenement house as a permanent institution in order to overcome that shortage. In view of this tendency it may be well to recall British experience from 1875 to 1909, at the end of which period the almost revolutionary Town Planning Act was passed. During that period sanitary and social reformers accepted the tenement, and encouraged philanthropists to erect buildings of this type. At the end of that period public opinion completely changed, and is now almost unanimously in favour of the small dwelling. Everywhere the tenement is now condemned, except as a mere temporary expedient where special problems exist. The building of tenement houses should be absolutely prohibited, but if this is not possible their building should be strongly discouraged, and the strictest safeguards be insisted upon. If, for example, we require tenement houses over four storeys high to be constructed fireproof throughout, as do St. Paul, Pittsburgh, Scranton and St. Louis, and require all three or four storey tenements to have brick exterior, stairs, halls, and fire escapes, investors in house property will construct houses less than three storeys in height because they will be comparatively cheaper in cost per unit of construction.

In almost every town there are a number of old houses which have fallen from their high estate, but yet are still sound in construction and capable of

being made sanitary and healthful dwellings. A form of effort in which private citizens might well engage is in buying up from time to time some of the more antiquated houses, improving them in the more essential respects, letting light into dark rooms, doing away with antiquated sanitary conveniences and substituting modern ones, improving generally the quality, tone and general appearance of the house, and when such renovation has been completed putting in a higher grade of tenants, and then as opportunity offers selling the building at a reasonable advance.

An association formed for work of this character is the Octavia Hill Association, the aim of which is to improve the living conditions in the poorer residential districts of the City of Philadelphia. The achievements of this association are as follows:

1. The securing of $229,600 for better housing conditions, which is represented by stock in the association at $25 per share on which dividends of four per cent. have been paid for twenty years.

2. A friendly relation between tenants and collectors, making the latter a family counsellor and friend of the former.

3. The ownership of 186 houses occupied by 253 families in which the standards of the association are required as to living and sanitation.

4. The management for other owners of 224 houses occupied by 460 families in which the same standards are required.

5. The conversion of a menacing slum condition in Germantown into a bright wholesome settlement of 32 Italian families enjoying a common playground and garden allotments.

6. The alteration for the Girard estate of eleven large residences into apartments suited to the changed neighbourhood conditions.

7. The alteration and management for one owner of 23 houses for 38 families where is shown a striking example of how the interior of a block may be developed for community use, and where is maintained a kindergarten and centre for social work.

8. The incorporation of the Philadelphia Model Homes Company and the erection for that company of 32 houses with apartments for 48 families having in common the use of a playground around which the houses are built. The group sets a standard for construction of low priced dwellings the rents of which are from $8.50 to $13.50 per month.

9. A study of housing conditions leading to improved housing legislation and the creation of the Philadelphia Housing Association to carry on such lines of legislative and educational housing work not possible under the charter of the Octavia Hill Association.

Of course there are old houses that cannot be made habitable and sanitary, and we have paid homage to this class of property for years. These houses are a menace to the health, the morals and general standards of living. An individual who sinned so grievously against the community would be punished—why should we be so much more charitable towards an individual's property. The old house like the old sinner should be dealt with less charitably than the new.

Unwholesome houses the owners of which refuse to make them healthful and sanitary should be scrapped as ruthlessly as antiquated machinery the owners of which find that new and improved machinery is more economical.

Buying lots was once a popular pastime and there must be many working men who own, or partially own lots on which it would be possible to build if other conditions could be made favourable. In Ontario, around most of our cities

a large number of lots must have been purchased during boom times. Many of these, of course were bought for speculation, but now that the expected price does not seem likely to be realized, many of them could likely be obtained at a fair price if investigation were made. Others would be built upon if money were available at a low rate of interest, and the cost of building were reduced. The Ontario Government has recently allocated a sum of $2,000,000 to be loaned under proper safeguards for home building purposes. This is frankly stated to be a temporary expedient and it is to be regretted that in some quarters it was received with carping criticism.

The municipal authorities themselves could do much to reduce the cost of building. The labourer who knows no more about correct town planning and house building than a child often insists on building his own house. For the benefit of such men as these, and others who own lots, a series of standardized plans and specifications should be prepared by architects who know their business. These could be supplied either at a low cost, or in view of the community improvement that would be brought about by the erection of houses based on these plans, supplied free. Room should be allowed for variation in size and elevation and other details in order to avoid monotony if several were built in the same neighbourhood.

Most cities have machinery by which home-building could be stimulated. City architects, engineers and lawyers could all help. The architect and the health officer could prepare jointly the standardized plans and specifications in which details of every piece of material required should be given. The purchasing department could purchase these materials at the source of manufacture and have them available at cost. The legal department could assist in reducing the legal expenses, and the engineers' department might also assist in staking out the position of the building upon the land. While it is perhaps not desirable that the municipal authorities themselves should embark upon building operations they can regulate and stimulate home-building by methods such as are above outlined.

Most towns own considerable quantities of land which they have acquired through excess condemnation, failure to pay taxes or other reasons. Why should they not set a good example to private owners and sell this land at an uninflated value for building purposes? In Toronto where there is probably the greatest scarcity of houses, the city has acquired through the non-payment of taxes 13,137 feet of frontage having an approximate value of $500,000, and 12,423 feet of frontage approximating in value to $700,000. The latter has been purchased from time to time in connection with street openings and other civic undertakings, and it not further required for such works. This gives a total of 25,560 feet of frontage very little of which, if any, is revenue producing property in its present idle state. The same condition probably exists in a lesser degree in many of our smaller towns.

It has been suggested that a tax exemption for a period of years might be allowed on houses of a certain fixed value, if built according to approved plans, but this while reducing the maintenance charges would not materially affect the initial cost of the house. The whole system of assessment, is, however, in need of careful study as it bears a definite relationship to the problem of home-building, and too frequently this relationship is overlooked.

All plans looking forward to the solution of the housing problem must include both restrictive and constructive legislation. In those portions of cities that are fairly well built up, the building regulations cannot with safety be

relaxed, but in those portions of the suburbs that are still to be laid out and adequate space can be allowed between the buildings, certain restrictions relating to the width of the paved parts of residential streets, kind of building material, etc., could be removed without danger, thus bringing about considerable reduction of cost.

Any palliative measures that may be adopted should keep in view the wider outlook towards a permanent solution and be made to contribute as far as possible towards that solution.

Ascertaining the Exact Situation.

One of our main troubles is that we are trying to solve in twelve months or less, problems that have taken thirty or more years to develop. It has been well said that "getting results" still counts more with some men than getting the right results in the most efficient and economic way. We lay out towns and townships, construct buildings, roads and bridges and colonize land without proper development schemes, on the theory that getting things done quickly is more important than getting them done efficiently and well. This theory of going blindly for results on the principle of "hustling" is the refuge of the unscientific or unimaginative mind that is impatient of expert advice or plans because they are presumed to waste time in preparation which ought to be given to constructive work. The problems are too complex to be solved by simple one-sided remedies. Attempts to reach a solution by short-cuts and quick results as in the past can only lead to the same kind of failure.

In view of the complexity of the problem, the interests involved, and the amount of money necessary to be spent in evolving satisfactory schemes it becomes pertinent to ask what we really know about the actual needs and requirements of the various communities throughout the Province. To attempt to carry out a programme on hearsay evidence is to invite mistakes which will result in the shattering of public confidence and will set back real housing reform for an indefinite period.

Consider recent statements that have appeared in the press. The chairman of the Toronto Housing Company is quoted as saying that his company has 150 applications for its houses that cannot be supplied, and he is also quoted as saying that Toronto needs 500 more houses. The Mayor of Toronto is reported to have said that Toronto needs 500 more houses, and Dr. Hastings in a written report puts the number at from 5,000 to 10,000 of low-priced houses to meet present demands and 5,000 a year for the next three years at least. Some say that in Hamilton 500 houses would satisfactorily meet the present situation, others say 1,000. It is said that Brantford requires 700 houses, Welland, 500 and border cities in the neighbourhood of 1,000. In view of these discrepancies it is evident that the facts have not been ascertained, or that wrong deductions have been drawn. According to the estimates that are at present available the expenditures would work out as follows for houses costing $2,500 without including the cost of the lot on which they are built:

Toronto (5,000)	$12,500,000
Hamilton (1,000)	2,500,000
Brantford (700)	1,750,000
Welland (500)	1,250,000
Border cities (1,000)	2,500,000

The above places are not the only ones in the Province where a housing problem exists, and the expenditure needed to cover the whole of the Province would, of course, be much greater than the above total amount of $20,500,000. Great as is the amount involved it is well within the ability of the Province properly aided by the Federal Government, to carry out, but it should not be undertaken until we know the facts. This all goes to show that we must investigate first, then legislate. Before plunging in and building something, we must know the extent and character of the demand for houses and the experience of other places in meeting somewhat parallel conditions. We need a social and economic survey, a diagnosis that will give confidence in the prescription for immediate needs and at the same time lead to the adoption of measures that will prevent more bad conditions arising, and will apply to meeting the situation in more normal times.

No plea is made for delay. Action should be taken at once but that action should be based upon knowledge, and the acquisition of that knowledge is the best way to secure quick and lasting results.

The Relationship of Housing to Health and Disease.

During the first year of the war it was made manifest to Britain that effective measures were imperative. Modern warfare had shown, as peace could not do, the vital part played by health and living conditions in industry, for it quickly became evident that industry was to play a great part in winning battles. This compelled a complete acknowledgment that the most vital factor to maximum production and national prosperity is the living conditions of the worker.

Great as are the economic factors in the problem of building homes for the people, there are other factors which are more important. The monetary loss to the community owing to disease, delinquency, crime and feeble-mindedness, is far greater in amount than the total that would be expended in providing sanitary homes with beautiful surroundings for all the people who need them. The time has come when give what stress we may to the so-called purely economic features we must give renewed and added emphasis to the kind of men we are turning out from our shops and factories, the kind of women who are swarming into commerce and industry, the kind of mothers who keep our workers' homes, and most of all the kind of children who are growing up in unhealthy surroundings. Children as national assets never stood so high as they do to-day. It is generally admitted that bad housing conditions are the main cause of all our preventable disease.

From a recent report of Professor Irving Fisher, of Yale, we learn that there are 3,000,000 persons in the United States at all times suffering from some form of sickness (equal to approximately 300,000 in Canada) of whom about 1,100,000 are in the working period of life, three-quarters being actual workers who must lose at least $700 a year, making an aggregate loss from illness of $550,000,000. The expense of medicine, medical attendance, extra foods, etc., would equal this amount; thus we have the total cost of illness as $1,100,000,000, of which it is assumed that at least one-half is preventable. The sick man is a burden to the community whilst the healthy man is an asset. The one has to be carried, the other carries his own burdens and helps to carry the burdens of others.

It has been well said that "tuberculosis is the disease of darkness." The spot maps match. The maps indicating the highest infant death-rate, the highest

tuberculosis death-rate, the greatest juvenile delinquency exactly match the spot map indicating the greatest congestion in housing accommodation. These subjects are so inter-related that they cannot possibly be separated. Where surveys have been made it has been demonstrated that there is from 25 to 50 per cent. more tuberculosis in tenement house districts of every city than in the individual homes. Recently a study of two contrasting districts was made in Cleveland and one of the results was the showing in actual figures of the relationship of disease and death to insanitary dwellings. One district was in the old crowded business section of the city. The other was in the outlying section and near some manufacturing plants. The rents in both were practically the same. In the first district between 1907 and 1914 there were 908 cases of tuberculosis or 52 per thousand. In the second district there were 450 or 28 per thousand. In the first district there were 665 cases of contagious disease in 1912 or three per thousand. In the second there were 286 cases or 1.29 per thousand. Evidence of the same character could be given for all the large cities in England, Scotland and the United States.

All the evidence goes to prove that the economic loss to the community caused by preventable disease and death resulting from unsatisfactory housing conditions is very great, and in estimating the cost of a good housing programme it would be only fair to take into consideration the saving that would be caused by the elimination of the causes of that loss.

The Relationship of Education to Home Building.

It has often been said that Governments cannot move in advance of public opinion. This is, of course, true but it does not relieve Governments of the duty of educating that public opinion in such a way that they may be able to advance. Perhaps there is no subject upon which there is such general ignorance as that of the proper housing of the people. It should be one of the fundamental duties of commissions and committees to educate the people as it is only by their support that progress is possible.

Both technical and general education has a close relationship to this subject. Technical and industrial education, if it is going to appeal to the masses, and to return dividends for the expenditure that is being made upon it, must result in an increase in wages for those who are receiving it. Increases in wages act as a solvent of the problem—slow but sure—as they help the workman to live in a better home. Proper instruction in town planning, the principles of co-operation, and the mechanics of building will result in greater economies and more satisfactory homes.

General education should concern itself with both the present generation and the next. The publicity departments of the Federal and Provincial Commissions previously recommended should attend to the former, and the latter should be done through the schools.

All efforts towards building satisfactory homes either in Great Britain or the United States owe the main part of their success to the press. A newspaper campaign properly conducted is one of the best methods of educating the public and informing it in regard to the advantages of beautiful, convenient and sanitary homes. Free use should be made of statistics presented in graphic form and not in the usual way of columns of figures which to the uninitiated mean nothing, and generally have a rather repellant effect.

Another method which can be used to advantage is the picture method. It should be one of the functions of the Commissions to have sets of lantern

slides and moving pictures prepared showing the activities and building of garden cities and suburbs, the work of home building associations, new methods of building homes, the results of research work in home building, the effects of bad town planning contrasted with those of good town planning, and many other features concerning the sanitary housing of the people which it is essential should be known before there can be a general sentiment in favour of the development of a permanent programme.

In this connection the financial aspect of the problem can also be dealt with. The total cost of different types of houses, the methods of payment, the saving resulting from continuous work unhampered by absence through sickness, the financial results that may be reasonably expected from the cultivation of garden plots, and other features may be emphasized with advantage. Indeed, one of the greatest services the Commissions could render would be the employment of a permanent lecturer whose services should be available to every authority desirous of inaugurating a popular campaign. The material available for work of this kind is very large and of great variety.

Education of the general public can also be carried on by means of reports and bulletins. The reports of the Commission of Conservation should be more widely circulated and might well be of two kinds, first a limited edition designed to appeal to the scientific mind, and, second, a much larger edition calculated to appeal to the average working man who is considering the question from a personal point of view of a home for himself and his family. The monthly, the *Conservation of Life,* which amongst other problems of conservation and reconstruction deals with those of providing homes in which to build up a nation, should receive a wide circulation. In fact, all means should be taken to bring the various aspects of the subject before the people upon whose co-operation and active interest the ultimate solution of the problem depends.

Inspection and instruction is carried on under various health authorities by women who visit the homes of the poorer classes and give assistance and advice in all that pertains to the bringing up of children and the sanitary conditions of the home. It is said that one of the women visited said to the Inspector: "I guess I don't need anybody to teach me how to bring up children. I have buried seven of 'em." When once the people are really convinced of the danger of uncomfortable, ugly and insanitary houses, and the feasibility and economy of obtaining homes that will be a credit to themselves and their children they will be willing to make the necessary temporary sacrifices.

The people must be taught to take a long range view, and while planning for the immediate present not lose sight of future needs and developments. It is true here as in every other department of our national life that "where there is no vision the people perish." Unless the leaders of our people are convinced of the importance of the problem there is little hope of accomplishing much. The efforts to educate the people must not be spasmodic. They must be continuous and long sustained if they are to accomplish their purpose.

The measures above outlined are outside the functions of what is generally understood as our systems of education but those systems surely have a part to play in this important matter. Are our universities doing their part? The University of Liverpool has a school of civic design. Birmingham University has a lecturer on "town planning," and London University has just appointed a professor in the same subject.

Our lower schools also can do much in this matter. We are building for the future and the best way to do this is through the schools where our future

voters, legislators and administrators are being trained. It has been well said that whatever you wish to find in the life of a nation you must first place in its schools. Education for the next generation will filter through to the parents and in this way will serve a double purpose.

Why should not the arithmetic concern itself with the financial problems of the purchase of homes, the cost of building, how rates and taxes are levied, cost of local improvements, comparison between renting and purchasing, etc? Many interesting problems of this nature might be set which would also serve all the purposes of arithmetical training.

History might concern itself, among other things, with the development of the home, and its importance in the upbuilding of a nation. The relationship of the home to the development of the town might be clearly shown, and the too prevalent idea that the importance of a town depends on the size of its population should be corrected.

Could not the so-called art in our schools be more directly related to the planning of houses, streets and towns? Plans and elevations, interior decoration, beautiful furniture, wall paper, floor coverings, the layout of streets and parks might be made the medium of a great part of the art that it is possible to give in our schools.

Several American cities publish bulletins on town planning, written in simple language for the use of the schools and the plan might be followed with advantage in this Province.

The permanent solution of the housing problem cannot be effectively worked out unless a long range view is taken and in this connection it will not be safe to ignore the schools.

Appendix VIII.

THE ONTARIO HOUSING PROBLEM.

AN ATTEMPT AT ITS SOLUTION.

By MRS. J. E. WETHERELL.

(Essay awarded special prize).

"You cannot rear an Imperial race in the slum."—*Lord Rosebery.*

It is only during the war that the State has awakened to the full sense of its responsibility towards the proper housing of its citizens. There were, it is true, in the happy ante-bellum days faint stirrings of the Governmental conscience about domiciling matters, which resulted in the English Housing and Town Planning Act of 1909; but it has been only during the present conflict that we have completely realized not only the actual military, industrial and moral value of the home to the State, but also the consequent obligation of the State, in sheer self-interest, to ensure to its citizens homes of such a character and in such surroundings as to enable us as a nation to produce the highest type of manhood and of womanhood. The Mother-country discovered that she could not make good soldiers out of slum-bred lads and men. Then the Munitions Board learnt that it could not secure an adequate output of shells, fuses and high explosives from improperly housed mechanics, so it set to work at once at great expense to provide model dwellings and suitable recreation centres for the munitioneers at Gretna Green and other ready-made villages. Lastly, the whole Empire began to realize as never before that it is to the home, no less than to the church and the school, that we owe the inculcation of those ideals that we like to associate with the name British,—ideals of chivalry, self-sacrifice and cheerful courage, of generous service to mankind and of fidelity to plighted word, which have proved the safeguards of civilization when mere statutory virtue has failed. Roused, therefore, by these three forms of the importance of the home to the common weal, England has already begun to exterminate her slums and has prepared a gigantic reconstruction scheme, providing for the building of from 250,000 to 500,000 houses in the first two years after peace is declared.

In Ontario we have a housing problem of lesser magnitude, but one involving, nevertheless, certain peculiar difficulties of its own. In our three largest cities we have allowed slums to develop to an extent unbelievable by those who have never wandered into the crowded districts. Indeed, every year the State suffers a prodigious loss from the character of the dwellings in which we house a great proportion of our urban population—the dark, crowded, unsanitary tenements and the ugly, "featureless, gardenless" houses that make no appeal to sentiment and furnish no stimulus to the imagination. Many of our factories cannot get the needed workmen because of the scarcity of attractive houses in the various industrial towns, while our farmers cannot secure help in the house or in the field owing to the almost universal lack of a separate cottage for the farm labourer and his wife. The problem is further complicated by the regard that we must

have to the future, when our soldiers return from overseas and when the tide of immigration again sets in towards Canada. Moreover, account must be taken of a possible redistribution of our industrial population when our factories change back from a war to a peace basis.

Owing to this latter contingency and to the fact that the present abnormally high prices of building materials and of labour are largely, if not wholly, due to war conditions, it would seem only sound economy if we should restrict our building, at least as far as practicable, during the present conflict, to the Federal Government's housing of its war workers and shipbuilders. Thus, we should be concentrating all our energies upon the winning of the war, our municipalities would be adhering to the safe economic principle of "keeping within the rim of their shilling," and we should have the necessary time in which to prepare our plans properly so that an adequate housing scheme might be put into effect as soon as the post-bellum reconstruction period begins. In this way a considerable measure of relief could be given at once and a certain permanence could be assured to those industries that we shall need after the war. Ship-building, for instance, must necessarily become a permanent peace industry if we are to secure sufficient tonnage in which to export our products when England is busy re-capturing her old-time trade in the four quarters of the globe. Therefore, it would be the part of wisdom if the Dominion Government were to build, say at Kingston, Toronto, Welland, Sarnia and Port Arthur, model villages or model suburbs for the shipyard workers, somewhat on the plan of the town built by the United States Government at Yorkship, New Jersey. The houses, thus provided under the supervision of the Conservation Committee, would furnish the general public with the best possible demonstration of good housing and with the most convincing arguments in its favour.

If such a plan were followed, there need then be no extravagant make-shift policy for the housing of the rest of the province. Rather, the Dominon and Provincial Reconstruction Committees would then be able to consider carefully the various difficulties that nowadays constitute a barrier to home ownership, could have time to formulate a financial policy by which to remove these obstacles, to make a complete and definite survey of the housing needs of the whole province, to engage in a "Better-Housing" publicity campaign, and to arrive at a decision as to the respective responsibilities of the Federal and Provincial Governments and the municipal Councils in the matter of providing dwelling house accommodations after the war.

At present the following obstacles stand in the way of meeting by private enterprise the increased demand for houses:—

1. The high price of land,
2. The high cost of building materials and of labour,
3. Heavy taxation,
4. And, in Toronto, the lack of cheap and rapid transportation to the suburbs.

Obviously, the agrarian difficulty is the crux of the matter, since the cost of the land affects also the assessment and the consequent taxation, and since any effort to solve that part of our problem sets in motion the whole machinery of our housing scheme.

Our first move would therefore be to equip the Ontario Bureau of Municipal Affairs with the wide powers now enjoyed by the English Local Government Board.

The next step would be to have this Bureau order a complete and definite housing and town-planning survey made, by means of a prescribed questionnaire, of each town and city in the province and also of the suburban areas contiguous to these centres. In drawing up the scheme of investigation, the Provincial Department should be assisted by an expert town-planner and by some experienced officer of the Public Health Department. The knowledge of municipal affairs thus gathered in any particular town should include, among other things, information on the following subjects:—

1. The number of families, with incomes specified, now in need of houses, and any possible change in the demand that peace conditions might bring.

2. The proportion of this number that wish to buy their homes, the proportion that prefer to rent, and the price that they would be willing to pay in each case.

3. The price of building lots suitable for workmen (a) within the city with all urban conveniences, (*b*) immediately outside the town limits.

4. The distance of these lots in each case from the workmen's employment and the transportation facilities between the two points.

5. The price for which a five-room house, with bath, could be built on these lots, with any recommendations for use of any particular building materials in that district.

6. Any efforts that have been made to supply the demand by (*a*) private effort, (*b*) industrial corporations, and (*c*) by housing companies that have taken advantage of the municipality's guarantee of 85 per cent. of their bonds. Photographs of the houses thus provided, showing the degree of beauty that they may possess in themselves and the relation that they may bear to their natural environment.

7. In the case of cities especially, full details of any evils that may exist, e.g., overcrowding, lack of fresh air, sunlight or sanitary conveniences.

The third step would be the drafting by the Bureau of Municipal Affairs, with the advice of the Conservation Commission, of a revised Housing and Town Planning Act, containing an *obligatory minimum* of *requirements,* as Lord Henry Cavendish-Bentinck would recommend, and providing for a method of inspection (similar to that employed by the Department of Education) by which this law could be enforced. We have already prescribed an obligatory minimum of education, so why should we not also, while our country is still young, exact from the municipalities a certain minimum of town planning? Only by such means can we avoid overcrowding, and the indiscriminate mixture of factory and residence districts, and secure the proper lay-out of streets and provision for parks and playgrounds. If "Muddy Little York," for instance, had employed a town planner a century ago, the modern Toronto would not now be devoid of diagonal arteries to shorten the distance from the heart of the city to the suburbs, nor if it had adopted a

oper system of zoning even fifteen years ago should we now see big industrial tablishments within a block of the two best private residences in the province.

An obligatory minimum should apply to the houses as well as to the land. minimum requirement of the number of cubic feet to each person, of the window ace for each room, of water supply, sewer connection and plumbing, and of open ace in the rear of each house should be fixed by Provincial legislation. Tenement uses should be absolutely forbidden, and the taking in of lodgers should be allowed nly, as in London, by special permission of the City Council. Provision ould be made for the periodic inspection of all houses under a certain rental, nd power should be given to the medical health officer to order the immediate acation of any unsanitary house.

In maintaining so high a standard, it should be our aim to secure the co-peration of all classes rather than to arouse antagonism. For this reason, a erfectly organized campaign for better housing should be carried on in the public ress, and, as in the case of the Chicago Child Welfare campaign, in the moving icture theatres, which may now be classed as a sort of "fifth estate." Every rgument should be given and the best illustrations shown of the desirability of ome-ownership for every family. Decentralization should be encouraged by ictures of garden cities like Letchworth, of garden suburbs like Hampstead, and f model villages like Port Sunlight.

Since beauty need be no more expensive than ugliness, a determined warfare hould be waged in the illustrated newspapers and on the films against the un-ovely, inconvenient type of dwelling with which the speculative builder has been lefacing our towns and cities for the last quarter of a century. Contrasting illustra-ions should be used showing, first, the ugly average modern house of Ontario, nd, secondly, the comfortable home of pleasing outline and proportions that night have been built for the same money. Contrasts of the interiors might also e shown, illustrating the present lay-out and the better plans that might have een followed at the same cost. Here, too, the campaign in favour of the three-lecker might be dealt a deathblow if we should throw on the screens the following icture. (Illustration follows.)

Since the average workingman's house rarely has the advantage of being uilt from an architect's plan, a Provincial architect should be employed to draw up plans for several standard dwellings ranging in cost from $1,600 to $3,500. The Toronto City architect has already designed such a house to cost $2,500. The standard type should admit of various modifications in order to prevent monotonous uniformity on any street on which these plans might be exclusively used. Incidentally, I might recommend that, in making his designs, the architect should have the advice and co-operation of the chief town planner, of a medical health officer, and last but not least, of a woman expert in household science, for the efficiency of our nation has been much impaired in the past by the ill-planned dwellings in which the over-worked housewife has had to bend over back-breaking sinks and has been obliged to take countless unnecessary steps in the fulfilling of her daily tasks.

In our efforts to secure the ideal standard of housing suggested by such plans we shall gain most valuable help if we take care to enlist the support of the labour leaders on our side.

Having then got all our preliminary machinery set in motion, we have next to arrange the necessary financing in order to put our plans into effect. Here a combination of various methods would seem wiser than the rigid following of

any one scheme. Five plans in particular recommend themselves as possible mean whereby housebuilding might be made easier, the following two of which ar wholly concerned with removing the agrarian difficulty:—

1. The granting of vacant building lots in the suburbs of towns and citie to returned soldiers with urban occupations. This matter could be arrange between the Dominion and Provincial Governments, the building sites being give in lieu of North-West homesteads, and the grant involving the obligations to buil on the land within three years.

2. A change in the present assessment law to allow the imposition of sliding scale of taxation on land and buildings, whereby the assessment of the lan is gradually increased until it reaches its full value while the assessment of th buildings under a certain maximum value, say $2,500 or $3,500, is graduall decreased to nothing.

This plan would bring down the present abnormally high price of vacan subdivided land, would stimulate building, and if the adjustment were extende over a five-year period, would fall heavily on no one. Each municipality would of course, have to take care that its remission of taxation on the cheaper houses wa not so great as to cause a deficit in town revenue that would have to be met by th imposition of increased taxation on the more expensive buildings.

The other three plans, the first two of which are already in operation in th province, give aid both in acquiring land and in erecting buildings. These are:—

1. The law by which a municipality is empowered to guarantee up to 85 pe cent. of their value the bonds of a housing company that puts up suitable building for rent at a profit of not more than 6 per cent. on the investment.

2. The loan of Provincial funds to municipalities to enable them to buil dwelling houses for sale at cost price or for rent at a moderate rental.

3. The complete financing by the Dominion Government of a municipality' house-building scheme.

Many advantages would result from municipal building, carried on with th aid of Dominion funds and under the supervision of the Provincial Government By buying its materials in large quantities and by giving a contract for man houses at the same time, a city could so materially reduce the cost of building a to make home-ownership again quite possible to a workman earning $20 a week and to bring comfortable housing within the reach of the lower paid workers wh can afford merely to rent. Moreover, by building self-contained, attractive work men's suburbs where each house has its own garden and where each district i provided with its own library, schools, churches and recreation centres, the cit could encourage decentralization somewhat after the old Belgian fashion. Th cultivating of the gardens would help to bring down the cost of living and migh provide profitable occupation when other work was lacking. The houses shoul be sold at cost, a small minimum cash payment being required, with a smal monthly payment that would in a lump sum cover interest, taxes, insurance an an instalment of the principal. By an extension of the whole payment over a long period, the monthly amount required from the purchaser might be about on per cent. of the total cost of the building and lot.

Two other means of meeting the housing demand might also be recommended viz:—

1. United private enterprise such as was recently planned in Guelph, where the citizens owning vacant lots banded together to build fifty houses of standard type, which would be sold at cost to workmen on small monthly payments.

2. The co-partnership scheme by which a co-operative society owns and operates an industrial district. There the workmen maintain "flexibility of labour" by owning, not their houses, but as a more liquid investment, shares in the co-operative society itself.

The housing problem in Toronto must be solved by special means. First, the down-town residence districts must be made more fit for habitation by a remodelling of the slums, by the provision of numerous vacant spaces, by limiting of the number of houses to the acre, and by a law which will compel factories to consume their own smoke. Then, a policy of decentralization should be systematically followed by (*a*) municipal building in the suburbs, and (*b*) an improvement in the transportation service. The Canadian Pacific and the Grand Trunk Railway should be induced, as were the London companies, to furnish workmen's express trains at cheap fares, morning and evening, and the city should extend its own civic electric lines ready to link them up with the Toronto Street Railway when the franchise of the latter company expires. An underground railway, reaching out diagonally to the suburbs, might also be necessary, but should be avoided if possible.

Lastly, the rural housing demand should be supplied by the erection of a standard type of labourer's cottage, for the building of which the farmer might receive a Government loan.

Appendix IX.

STANDARD SPECIFICATIONS.

EXPLANATION.

When the Ontario Housing Committee undertook to work out various types of houses conforming to their recommendations and standards, as given in the general report, it was recognized that the full value of their suggestions would not be realized, unless more or less complete working drawings and specifications were prepared, illustrating and describing various types of construction.

The Committee felt that this was especially desirable in view of the fact that less than ten per cent. of inexpensive homes have the benefit of architectural supervision.

It will be readily understood that the task of preparing complete drawings, illustrating all types of construction, would be a very serious undertaking. The drawings, therefore, indicate general layout only, with governing dimensions, location of special items, such as plumbing fixtures, electric outlets and typical details of doors, window frames and sash, and special fittings.

The specifications have been prepared as a guide in determining the general trade classification and standards of materials and workmanship. It will be noted that in the suggestions for General Conditions, as well as in trade specifications, the supervision of the contract forming part of an architect's service has been delegated to the owner. This has been done for the purpose of directing the owner's notice, where an architect's services are not available, to particular items requiring attention.

Too much emphasis cannot be placed on the need and desirability of the services of a competent architect.

Where a development involving the construction of a number of dwellings is contemplated, it will always be possible, as well as advisable, to secure the advice of an architect. The Ontario Association of Architects has expressed its willingness to co-operate in improving the design of small houses by providing drawings at a nominal cost to assist the builders of individual dwellings.

neral Conditions.

This specification has reference to a Contract to be made with .....for the erection and completion of a dwelling, or of dwellgs, all as hereinafter described, and as shown, or to be shown, on the awings. 1. Work to be done.

The works will be situated..... 2. Location of Works.

These conditions are not to be understood as expressing in exact terms, as taking the place of the Building Contract. The latter will be ecuted, and these General Conditions are given for the purpose of termining the several responsibilities of the Owner and Contractor, r establishing general standards of material and workmanship, and as basis for adjustments. 3. Contract.

An accurate survey of the property, indicating the relation of the ilding to the property lines will be furnished to the Contractor by the wner. 4. Survey.

The Contractor for Masonry shall secure all Permits and Licenses ecessary for the execution of the entire work, except ing Plumbing and lectrical work, and shall pay the lawful fees therefor, and the same all be included in the contract price. This Contractor shall give the oper persons all requisite or desirable notices relating to the work, cept as noted above. Fees, Permits, and Licenses for Plumbing and lectrical work shall be paid for and obtained by Contractors for those ades. 5. Permits and Licenses.

Each Contractor shall strictly comply with all Provincial Laws and unicipal Ordinances, Rules and Regulations, in so far as they are pplicable to the work; anything herein specified or shown on the drawgs to the contrary notwithstanding. 6. Laws and Ordinances.

Water supply shall be arranged for by the Contractor for Masonry, ho shall obtain permits, pay fees, and install the construction water pply system, extending same to convenient points about the premises. Vater rates shall be paid by this Contractor throughout the progress of ie work. 7. Water Supply.

The Contractor for Masonry shall lay out the general lines and levels f the works, and be responsible for the correctness thereof. The Conractor for each trade, however, shall be responsible for the laying out of nes having special reference to their work. 8. Laying Out Work.

The Contractor for Masonry shall provide and maintain until com- letion of the whole work sufficient watchmen, lights and signals as may e necessary to insure Public convenience and safety. 9. Watchmen, Lights, etc.

The Contractor for Masonry shall provide and maintain an office on he works for the use of all trades. This Contractor shall provide proper ight and heat for same and keep on file for general use a complete et of drawings, specifications and details. 10. Offices.

11. Temporary Enclosures. The Contractor for Carpentry shall furnish and maintain all necessary temporary enclosures for door and window openings until such time as the permanent frames, doors and sash are in place.

12. Light and Heat. Any light required for the carrying out and completion of the work shall be supplied by each Contractor for his trade. Should the weather become sufficiently cold to require heat the Contractor for Carpentry will be required to furnish same under his contract. The use of salamanders, or open fires, will not be permitted in any spaces where plastering has been commenced.

13. Extent of Drawings and Relation to Specification. The plans, sections, and other drawings are intended to show the position and extent of the works and the general features of their design and construction; but neither they, nor this specification, are guaranteed to show or describe every part or portion of the work; anything omitted therefore, either from the plans or specifications, which may fairly be considered to be necessary for the proper execution or completion of the work, shall be held to be included in the Contract.

Should drawings and specifications disagree the better quality or greater quantity of work or materials shall be estimated upon, and unless otherwise ordered in writing, shall be furnished.

The following is a list of drawings prepared and upon which the contract is based:—

14. Figured Dimensions. Figured dimensions shall take precedence of scale measurements, and detail drawings shall take precedence of general drawings, and shall be considered as explanatory of them and not as indicating additional work.

15. Elaboration of Details. If, in the opinion of any Contractor, detailed drawings furnished later show more elaborate or more expensive work than as specified or shown on contract drawings, it shall be the duty of such Contractor to notify the Owner within ten days from receipt of such drawings, in order that the drawings may be amended or the additional expense adjusted and authorized. Failure to give such notice will be construed as an acceptance of the drawings.

16. Contractor's Copies of Drawings. The Contractor will be supplied with two copies of each of the drawings, and he must satisfy himself as to the accuracy of the said copies in every detail. Any additional copies will be furnished by the Owner at cost to the Contractor.

17. Sub-Contractors. Should any Contractor desire to sub-let any portion of the work, he must first secure the Owner's approval, in writing, of such sub-contractors.

18. Materials and Workmanship. Materials and workmanship shall be the best of the various kind specified, and where quality is not distinctly specified, shall be in accordance with the best trade practice and in character with the building generally.

Materials and workmanship of unsound or unfit character, or work and materials damaged after they are in place, shall be removed and reconstructed. Where such removal is impracticable, the Owner shall

e the Option of accepting defective work at such reduced prices as y be mutually agreed upon.

19. Relation with Other Trades.

The Contractor for each trade must thoroughly familiarize himself h the work of other trades, and arrange his work to conform with ers, so as to eliminate all unnecessary cutting. The Contractor for sonry and Carpentry, particularly, should have a full understanding the requirements for Plumbing and Heating.

20. Cutting and Fitting.

All cutting and fitting of materials for the passage of pipe, or the tallation of other materials, as may be necessary for the general pro- ss of the work and the repairing of same, shall be done by each Con- ctor whose work requires cutting, unless otherwise specified in separate de specifications; all such cutting and fitting shall be included in the tract price.

No cutting which will affect the strength or appearance of the work ll be done by any workman without the full knowledge and consent of Owner.

21. Examination of Existing Work.

Each Contractor shall carefully examine work of other Contractors h which his own work shall connect, or by which it will be affected, l shall report to the owner any defect or deficiency he may find, other- e he will be held to have accepted such existing work as in a suitable dition for him to proceed with his own work, and as having waived all ims for any damage to or defect in his own work caused thereby.

22. Responsibility for Existing Work.

The Contractor shall, upon acceptance of any existing work, be held ponsible for any damage to such work resulting from his own opera- ns or those of his sub-contractors, or from rain, snow, or other weather ditions.

23. Protection and Liability Insurance.

Each Contractor shall provide everything for the proper protection his work and of the adjoining properties, and shall hold the Owner e from any loss, either by accident or by damage to person or property, d shall, at his own expense, insure the workmen under his control ainst injury or accident.

24. Fire Insurance

The Owner shall maintain Fire Insurance for the amount paid by n to the Contractor. Each Contractor shall insure and hold the Owner e from any loss by fire on the balance of the work not paid for and for plant, tools, etc.

25. Alterations in Works.

Should any alteration be required in the work shown or described by e drawings or specifications, the same will be made without affecting e validity of this Contract. Fair and reasonable valuation of the work ered, added, or omitted, shall be made, and the sum agreed to be paid r the work according to the original specifications shall be increased or minished as the case may be, the value of such alteration, addition or ission to be determined before the alteration is made, and shall be ted in the order therefor.

26. Contractor's Supervision.

The Contractor shall give his work his personal supervision and shall ovide a competent foreman for each trade on the works, at all times.

27. Power of Owner. The Owner shall have the power to order the removal, after 24 hours notice, of any workman considered to be incompetent, and of all material condemned. Should the Contractor refuse or neglect to supply a sufficiency of properly skilled workmen, or materials of the specified quality or fail to prosecute the work with due diligence, the Owner shall be at liberty, after 48 hours' written notice to the Contractor, to provide any such labor or materials, and to deduct the cost thereof from the Contract sum, or he shall be at liberty to terminate the employment of the Contractor and to take possession, and complete the work included in the Contract.

In the case of such discontinuance of the employment of any Contractor, he shall not be entitled to receive any further payment until the work shall be finished, at which time any balance shall be paid to the Contractor, but if the unpaid balance shall not be sufficient to complete the works, then the Contractor shall pay to the Owner the amount of such difference.

28. Cleaning. Each Contractor shall be responsible for keeping the premises and streets free from debris arising from his operations. At completion of work each Contractor shall leave the whole premises clean and in perfect condition.

29. Guarantee. The acceptance of this contract shall be understood to imply and carry with it a guarantee on the part of each Contractor to make good any defects arising or discovered in the work of the building within one year after completion and acceptance by the Owner, whether from shrinkage, or failure of labor or material.

Excavating.

1. General Conditions. The General Conditions pertain to all trades, and form part of this Specification and Contract, and shall be carefully read and adhered to by this Contractor.

2. Lines and Level. The Contractor for Masonry will establish and give to this Contractor the levels and lines necessary for all excavation in connection with footings, walls, piers, etc.

The Contractor for Plumbing will establish lines and levels for all excavating in connection with Plumbing work.

3. Work Included. This sub-division shall include all excavating of whatever nature required for footings, walls, piers, temporary and permanent drainage system, and water supply or other piping, all baling, pumping, bracing of banks, care of pipes and conduits, all back-filling and grading to levels indicated.

4. Depth of Excavations. Foundation walls and piers shall in no case be less than four feet below finished grade.

The bottom of all excavations for foundations or footings shall be carefully levelled and well rammed, ready to receive concrete.

The final grading for all sidewalks and floors on earth shall be done when the paving or floors are ready to be laid.

In all cases where drawings indicate a basement or cellar, allowances all be made for damp-proofing, or waterproofing exterior walls. 5. Allowances for Waterproofing.

Wherever water, sewer, gas, or other piping is encountered, telephone telegraph wires, or conduit, notification shall be immediately given to e proper officials, persons or corporations owning same, care being taken the meantime to properly protect same until removed, or otherwise ovided for. 6. Pipes and Conduit.

Provision shall at all time be made to keep all excavations free from ıter, throughout the entire progress of the work. 7. Removal of Water.

Where excessive water is encountered in excavating for basements or llars, a 4-inch open tile drain shall be placed around the footings of the sement or cellar area, graded to drain as directed. 8. Foundation Drain.

Execute all back-filling as soon as possible after foundation walls and ains have been approved by the Owner. All this filling shall be done layers well flooded and tamped. 9. Back-Filling and Grading.

All surplus excavated material shall be spread about the premises, as rected.

asonry.

The General Conditions pertain to all trades, and form part of this ɔecification and Contract, and shall be carefully read and adhered to by is Contractor. 1. General Conditions.

This sub-division shall include all materials and labor of whatever nd necessary for the completion of all concrete footings, walls, piers ıd floors, the waterproofing of same, all brickwork, pointing, including ɔinting around windows, and all cleaning. Also all items mentioned in e General Conditions as forming part of this sub-division. 2. Work Included.

This Contractor shall give proper notice to Contractors for other ades in order that they may locate any openings required for their work. 3. Relations with Other Trades.

This Contractor shall also build in wood bricks, nailing strips, and her accessories, supplied by other trades.

Wood centres for turning all brick arches will be furnished this Contactor by the Carpenter.

After joints between door and window frames and masonry have been ulked by the Carpenter, this Contractor shall point up all joints with ment mortar.

'andard Requirements.

The following requirements in regard to materials and mixtures shall ɔvern in all cases where they are used in any part of the construction, ıless otherwise specifically mentioned. These standards shall apply to l trades using any of the materials mentioned under this heading.

Water used for concrete, mortar and grout shall be clean and free om acids and strong alkalies, or other foreign matter. 4. Water.

5. Sand. Sand shall be clean, coarse and sharp, and free from all salt, loam clay and other foreign materials; shall be washed, if required,

6. Broken Stone for Concrete. Broken stone for concrete shall be clean and sharp, free from dus loam and other injurious substances, and broken and screened to size hereinafter specified for various classes of work.

7. Gravel for Concrete. Gravel for concrete shall be clean, free from loam or other injurio substances. When sand and gravel are delivered in bulk proportion must be made to meet the requirements specified by screening if necessar

8. Lime. Lime shall be of the best quality, freshly burned lump lime approved brand, and shall be stored under cover, as specified for cemen Lime shall be slaked in large wooden boxes and allowed to stand for n less than two weeks before using.

9. Portland Cement. All Portland cement used on this work shall be of a well know standard brand, approved by the Owner, and shall be in accordance wit the standard specifications of the Canadian Society of Civil Engineers.

10. Non-staining Cement. Non-staining cement shall be freshly ground . . . . . or othe non-staining cement of equal quality.

11. Cement Mortar. Cement mortar shall be composed of one (1) part Portland Ceme and three (3) parts of sand, mixed dry in a box, wet to the proper co sistency to make it work smoothly, and immediately used.

12. Cement and Lime Mortar. Cement and lime mortar shall be composed of one (1) part Portlan Cement and three (3) parts of sand, mixed dry in a box, wet to t proper consistency, tempered with lime paste, and immediately used.

13. Lime Mortar. Lime mortar shall be composed of one (1) part lime and three (parts sand.

When coloring is required, the desired results shall be obtained wi mineral pigments.

14. Mixing Mortar. The Contractor shall provide proper boxes and platforms for mixi mortar, as under no conditions shall mortar be mixed on the ground, on any floor of the building. All parts shall be accurately measured a mixed in a manner satisfactory to the Owner.

Cement mortar shall be mixed as required for immediate use, a any such mortar that has been mixed for a period exceeding thirty (3 minutes must not be used on the work, and must be removed from t premises.

15. Freezing Weather. Except when completely enclosed and heated, no masonry shall built when the temperature is below 20 degrees F. In temperatu between 20 degrees and 32 degrees F., or when directed, masonry may executed with mortar to which salt in the proportion of 2 pounds to ea bag of cement, has been added.

Face brick and pointing shall not, under any circumstances, executed in freezing weather.

16. Mass Concrete. Mass concrete shall consist of walls, piers, footings and other membe not reinforced.

17. Measurement of Cement and Aggregate.

All materials composing the aggregate shall be measured by volume in hoppers, boxes, barrels, or other approved accurate method. Cement shall be measured by weight, and one hundred (100) pounds shall be considered the equivalent of one (1) cubic foot; when the cement is delivered in bags, each bag shall be considered as equalling one (1) cubic foot.

18. Aggregate.

The aggregate shall be composed of sand and broken stone, or gravel, as specified. To the specified quantity of cement shall be added the proper proportion of sand to give a mixture of maximum density. The number of cubic feet of sand to be used shall be determined by experiment with the actual material to be used. Mix dry different volumes of sand with a fixed amount of gravel. That proportion giving the heaviest mixture per unit of volume shall be used. The mixing shall be done with the greatest care, so as to secure the greatest possible filling of voids.

19. Mixing.

Concrete shall be machine mixed wherever practicable. Mixers shall be approved batch types, and each ingredient of the concrete, including water, shall be accurately measured for each batch. The machine shall be operated long enough after the last ingredients are deposited in them to thoroughly mix and incorporate all the ingredients at least one (1) minute. Broken stone, or gravel, when so directed, shall be thoroughly saturated with water before being put in the mixers.

If the concrete for minor portions of the work is mixed by hand, the material shall be mixed on a strong water-tight platform. The sand and cement in specified proportions shall be spread in layers on the mixing platform, the sand at the bottom, and then thoroughly and evenly mixed dry until a uniform color. It shall be turned at least three (3) times; water shall then be added and thoroughly incorporated into the mixture. The sand and cement mixture and the thoroughly wetted coarser aggregate shall then be placed in superimposed layers and be turned together at least three (3) times, not including shovelling from platform to barrows. The number of turnings shall be sufficient to produce a resulting loose concrete, thoroughly mixed and of a consistency uniform throughout. The use of rake or hoe will be permitted in mixing sand and cement, but not after stone has been added.

20. Consistency.

The concrete shall be a wet mix of such consistency that when dumped in place, it shall require only light tamping.

21. Handling.

Concrete shall be conveyed to place of depositing in such a manner that there will be no separation of the different ingredients. In cases where such separation inadvertently occurs, the concrete shall be remixed before placing. Any concrete which has commenced to set before placing shall be rejected and immediately removed from the work and wasted in such a manner as may be directed.

22. Placing.

The specified consistency of the concrete will require only light tamping or spading. Surfaces which will be exposed to view shall have the concrete well spaded against the forms to bring the finer portions to the surface. Holes and voids remaining after the removal of the forms shall be struck smooth with one (1) to two (2) cement mortar. Every

precaution against quick evaporation must be taken and rough Hessian or hop sacking, well saturated with clean water, shall be used over the work as it progresses, if directed. When any work is stopped before completion of the mass, the concrete shall be left with a clean, rough surface without cavities or loose stones. When placing fresh concrete upon the surface of old concrete, all laitence, or scum, shall be removed, using wire brushes where necessary; all dirt brushed off, and the surfaces of the old concrete thoroughly wet and broomed with a thin wash of cement grout mixed one (1) part cement to one (1) part sand. All forms shall be wet before concrete is poured.

Concrete work which is to show an exposed or finished face is under no circumstances to be executed with frozen materials or in freezing weather, or where there is a probability of freezing before the concrete has received its initial set.

Concrete placed during hot weather shall be wet at least twice each day during the first week, and protected from the sun.

23. Forms and Centring. All forms shall be built of tongued and grooved dressed lumber of a thickness sufficient to prevent bulging, provision being made to prevent concrete adhering to forms.

Forms shall be left in place until the concrete has attained sufficient strength to resist accidental or premature strains.

24. Brick. Common brick shall be hard-burned, uniform in size and quality.

Face brick shall be as selected.

All brick shall be the product of a well and favorably known manufacturer.

25. Bricklaying. All brickwork below grade, and all arches and chimneys, shall be set in cement mortar. Brick work above grade shall be set in lime mortar.

All brick to be kept thoroughly wet before being laid, except in freezing weather. All to be laid with a shove joint in full bed, thoroughly slushed up with mortar at every course.

All brickwork to be built level, plumb, square and true, to dimensions shown. Header courses, in all cases, to be bonded through the walls piers and arches.

Height of Courses—generally all work to be laid with joints not exceeding three-eighths (3/8) inch thick.

Common Bond.—Bricks in walls shall generally be laid in common bond, five stretcher courses to one header course.

26. Chimneys. Chimneys shall be built true and plumb throughout the entire height and entirely independent of any framing.

Flues are to be formed of square, rectangular or circular earthenware flue linings, of the sizes indicated on drawings, but in no case shall the smallest inside dimensions be less than eight (8) inches.

Each flue at the base shall be provided with cast iron soot door and frame of a size equal to the largest inside dimension of the flue.

Cast iron pipe rings, seven (7) inches in diameter, for stoves, shall be built in. Unless otherwise stated, the top of pipe rings shall be placed one (1) foot below finished ceilings.

Pipe rings for furnaces shall in all cases be of the size required by the manufacturer of the furnace selected.

At the completion of the work, all flues must be thoroughly cleaned from top to bottom.

27. Cleaning.

All exposed walls of common brick to be properly cleaned at the completion of the building and left in perfect order. All face brick at final completion, or when directed, shall be washed down, cleaned and pointed. All damaged work to be made good; defective work to be cut out and replaced, leaving all complete and perfect in every respect.

28. Waterproofing.

Where waterproofing of basement or cellar walls and floors is required, the type of waterproofing employed shall be determined by the condition found upon completion of the excavation and the selection referred to the Owner for confirmation.

Waterproofing shall be of the following types:—

Type A—Integral Waterproofing.

The waterproofing compound shall be the product of a well and favorably known manufacturer and shall be used strictly in accordance with the manufacturer's specifications.

Type B—Membrane Waterproofing.

This type contemplates a continuous membrane waterproofing of walls and floors, composed of three-ply of . . . felt and four moppings of . . . pitch.

All perpendicular walls where this waterproofing is applied shall be protected with one-half (½) inch plaster coat of one (1) to three (3) cement which, starting at the bottom, is to be applied as waterproofing proceeds.

Type C—Damp Proofing.

This shall consist of two full moppings of re-distilled tar applied on the exterior wall surface from the footings to finished grade level. This coating must not be applied until the walls have been cleaned and become thoroughly dry.

29. Foundations.

Foundation wall and piers shall be of dimensions and extend to the depths indicated on drawings, except where local by-laws require additional thicknesses or depths, but in no case less than nine (9) inches and extending at least four (4) feet below finished grade.

Concrete mixture: 1-3-5.

Stone to pass 2½-inch mesh.

30. Finish of face of Concrete Walls.

Generally it is the intention that exposed surfaces shall be left clean and smooth as they come from the forms. Where this result has not been obtained, rough and uneven surfaces shall be carefully pointed with one-to-two cement mortar.

31. Concrete Floors.

Where concrete floors are laid on earth the surfaces shall be carefully levelled, the earth thoroughly tamped, until a firm bottom is secured, and filled with broken stone or gravel concrete, four (4) inches thick, graded

to drain as indicated, or directed. Concrete mixture: 1-3-5. Stone to pass 1-inch mesh.

Where membrane waterproofing is required this base shall be followed by a second layer of concrete three (3) inches thick, laid after the waterproofing has been placed.

The finished surface shall be 1-inch in thickness, composed of two (2) parts cement to three (3) parts sand trowelled to a perfectly smooth, hard and even surface, and finished neatly against the walls and piers.

Sprinkling of dry cement on the surface while trowelling will not be permitted.

Roofing.

1. General Conditions. The General Conditions pertain to all trades, and form part of this Specification and Contract, and shall be carefully read and adhered to by this Contractor.

2. Work Included. This sub-division shall include the furnishing and placing of all composition roofing, flashing and leader boxes in connection with same.

Where wood shingles are called for, the shingles and necessary flashing will be furnished and placed by the Carpenter, as specified under Carpentry.

The Roofing Contractor will furnish and erect all hanging gutters, leaders, and leader heads.

3. Materials. Materials for composition roofs shall be the product of a well and favorably known manufacturer, and shall be laid strictly in accordance with the manufacturer's specifications.

Leader Boxes: Each outlet shall be provided with a " . . . Leader " as manufactured by . . . . . or equal.

All flashing, hanging gutters, exterior leaders and leader heads shall be a favorably known brand of No. 26 Gauge Galvanized Iron.

4. Guarantee. This Contractor shall furnish a written guarantee warranting all proofing and sheet metal work installed under this Contract for a period of ten (10) years from and after date of acceptance of the same, binding himself to repair or replace, at his own expense, when so ordered by the Owner, any and all portions of his work which may deteriorate or leak within said period.

Carpentry.

1. General Conditions. The General Conditions pertain to all trades, and form part of this Specification and Contract, and shall be carefully read and adhered to by this Contractor.

2. Relations with Other Trades. This Contractor shall furnish all wood nailing pieces, or other items which require to be built in with the work of other trades; provide all information in connection with openings required, furnish all templates required by Mason Contractor, and do all cutting of wood work required for mechanical trades.

3. Work Included. This sub-division shall include the furnishing of material and labor for all rough and finished carpentry, including cash allowance for finish-

g hardware, as specified herein, indicated on the drawings, or as may necessary for the proper completion of the building.

4. Materials, Framing, etc.

All materials for framing (except as otherwise mentioned), roof eathing and under floors shall be Hemlock, reasonably dry, sound, free om knots, shakes, dry rot, or other imperfections impairing the strength durability, and shall be sawn true and full, to the dimensions specified; l joists and studding shall be sized to an even width.

Exposed rafter ends, exposed vertical wall sheathing and battens, and op siding, under six (6) inches in width, shall be good quality Spruce, asonably well seasoned, free from rot, sap, large or loose knots. Lap ding, in excess of six (6) inches in width, shall be good quality White ine, reasonably well seasoned, free from rot, sap, large or loose knots.

All joists, studding and roof rafters shall conform to the following zes and spacing:—

Floor Joists:	
Spans up to 12 ft.	2" x 8"—16" O.C.
Spans 12 ft to 16 ft.	2" x 10"—16" O.C.
Roof Joists:	
For flat or Hopper roofs up to 14 ft. span	2" x 8"—20" O.C.
Ceiling Joists	2" x 4"—16" O.C.
Rafters: Up to 12 ft. unsupported span....	2" x 4"—20" O.C.
Rafters: To 16 ft. span	2" x 6"—20" O.C.

In general, studs shall be doubled at sides and heads of openings. russ over openings wider than 3' 0" and over all openings in load bear- ig partitions. Whenever studding occurs over sills, girders or plates, ney shall run down to these, be securely spiked thereto, and to floor oists as well. Where studding is carried on joists, the joists shall be oubled under walls or partitions running parallel to joists and shall est on a double plate where at right angles to joists.

5. Bridging.

Bridge between all joists with one (1) double row of cross bridging or all spans up to twelve (12) feet, and two rows for all spans exceeding velve (12) feet.

6. Sheathing.

Sheathing for exterior walls and roofs shall be dressed on one side to n even thickness, not less than 13/16" in thickness.

7. Floors.

All floors throughout shall have an underfloor, dressed on one side to n even thickness not less than 13/16". Over this lay one layer of heathing Paper lapping each sheet at least three inches and extending nder all partitions. All finished floors throughout shall be thoroughly easoned kiln dried edge grain Douglas Fir, free from knots, sap stains r other imperfections, 13/16" thick and finished not more than 2½" on ne face.

Finished floors shall not be laid until after all plastering has been ompleted and the plaster thoroughly dry.

Flooring shall not be laid in less than 6-foot lengths, except for ieeing out at walls. All flooring shall be well driven into position, ghtly strained and blind nailed, using finishing nails in all cases.

Flooring shall be carefully sandpapered to a smooth uniform surface fter laying, removing all ridges and mill marks. It shall then be com-

pletely protected with heavy building paper, well lapped. This pape shall be renewed as often as required, and finally removed when directed and all floors carefully cleaned ready for finishing.

8. Gallery and Porch.

Floors shall be of good quality White Pine, free from sap, large o loose knots, dressed on all sides, finishing not less than 1⅛″ in thickne and from three (3) to five (5) inches in width.

Steps to all galleries and porches shall have 1¾″ strings, ⅞″ riser and 1⅛″ treads, laid in two (2) widths, with ¼″ between widths, an between tread and face of riser. Material as specified for floors.

Where lattice is indicated on drawings, it shall be composed of Whit Pine, or Spruce strips dressed on all sides to ½″ thick by 1¾″ in width

9. Grounds.

Grounds shall be provided wherever required to afford proper nailing for wood trim, including door and window trim and for all base, wain scot caps, chair rails, etc.

All grounds shall be of Spruce and in general 1¾″ x ⅞″ secured i position in a manner absolutely rigid, straight, level, even and plumb so that the surfaces of finished plastering shall be flush with the face o edge of all grounds.

10. Furring.

All exterior brick walls in finished rooms shall be furred with 1″ x 2 Spruce furring firmly secured in place.

Where "knee" walls occur, the rafters shall be furred horizontall and vertically.

11. Finished Woodwork.

Finished woodwork, such as Exterior Trim, including Main Cornic and Facia, Porch Posts, Cornices and Trim, Exterior Window Frame and Sash, Door Frames and Doors, shall be of White Pine, thoroughl seasoned (stock for sash and doors, kiln dried), free from sap, stain large or black knots, or other imperfections marring its appearance o durability.

Interior finished woodwork, such as Window and Door Trim, Doo Frames and Doors, Picture Mould, Dado Cap, Plate Rails, Stairs, includ ing finished Strings, Risers, Balusters, Handrail and Newels, shall be o British Columbia Fir, of good quality, kiln dried, free from sap, stain large or black knots, or other imperfections impairing its appearance.

In general, all finished woodwork shall be finished and assembled a the mill, as far as practicable, and delivered at the building ready to se in place.

No Interior Frames, Trim, or other Interior Finish of any sort, shal be set until the plaster is on and sufficiently dry.

All woodwork shall be worked in the best manner known to th Carpentry trade; mouldings shall be cleanly cut and sharply defined, an all mitres, copes, or butt joints accurately made.

All panel work shall be put together in such a form as to allo a free movement of panels, the panel moulds being secured to stiles an rails. All panels shall be primed or stained before being framed int place.

All work shall be free from machine marks and shall be carefull sandpapered.

All nails shall be carefully set and screws counter-sunk.

All frames and finish of every sort shall be put up plumb and true.

All finished woodwork throughout shall conform to the following Standard Requirements."

tandard Requirements.

12. Window Frames.

All window frames shall be constructed for sliding or hinged sash, as ndicated on the drawings.

Sliding sash shall have box frames, fitted with cast iron face steel xle sash pulleys, weight boxes of the sizes indicated with removable ont to pockets in the pulley stiles and pendulum in boxes for double ung sash.

Casement frames shall be rabbetted and checked.

All window frames shall be constructed in accordance with detail rawings.

13. Sash.

All sash shall be constructed for glass of sizes noted. Sash shall be oulded and checked in accordance with detail drawings, mortised and nmoned, glued and pinned, in accordance with the best trade practice.

All sliding sash shall be hung with sash cord, the product of a favor- bly known manufacturer, and of a size suitable to weight of sash and ounter-balanced with cast iron weights.

14. Door Frames.

All exterior and interior door openings shall be fitted with frames or hinged doors, as indicated on drawings. These frames shall be rigidly locked, wedged and firmly secured. Frames shall be rabbetted or fitted ith stops, finishing full thickness of walls or partitions where required nd arranged to receive trim on one or both sides, in accordance with etail drawings.

15. Caulking

All exterior door and window openings shall be tightly caulked with icked oakum by this Contractor, and pointed with cement by Masonry Contractor. After final pointing, this Contractor shall neatly set all eather beads.

16. Doors.

Doors shall be of the type, size and thickness indicated on details, and hall be the product of a well and favorably known manufacturer.

Doors shall be constructed with solid stiles and rails and three-ply aminated panels.

All glazed doors shall be provided with muntin divisions and moulded lass stops.

17. Trim.

All door and window openings to have full trim.

All rooms, first and second floors, to have base with floor mould.

Kitchens, Kitchenettes and Bathrooms to have Dado Cap, 4′ 6″ bove floor.

Dining Room to have Plate Rail.

Living Rooms, Halls and Bedrooms to have Picture Mould.

18. Stairs.

Stairs shall be constructed either with rough Spruce stringers and inished wall and outside strings, or, treads and risers may be housed into inished strings.

All finished strings for stairs, first to second floor, shall be British Columbia Fir, with 7/8" Fir risers and 1 1/8" Birch treads.

Basement stairs shall have 1 3/4" Spruce treads and open risers and Spruce rail, where necessary.

19. Fittings. Each Kitchen, or Kitchenette, shall be provided with cupboard, and at all sinks cupboard and drain boards, or drain board only.

Pantries shall be provided with cupboards, or cupboards and shelves.

Bathrooms shall be provided with medicine cabinets.

Coat Closets shall be fitted with Hook Strips on three sides.

Clothes Closets shall be fitted with Hook Strip along one side; also one Spruce Rod, 1 1/4" in diameter, placed as directed.

20. Hardware. This Contractor shall provide all rough hardware and fix all rough and finishing hardware. He shall allow the sum of eighty dollars ($80.00) per house (i.e., per family), for finishing hardware, exclusive of cost of setting same. This amount will be expended at the discretion of the Owner.

Lathing.

1. General Conditions. The General Conditions pertain to all trades and form a part of this Specification and the Contract, and shall be carefully read and adhered to by this Contractor.

2. Work Included. This sub-division shall include furnishing and placing of all wood lath, Stucco Board, and corner beads, etc., ready for plastering, as may be necessary to properly complete the work.

3. Material. All exterior walls where stucco finish is required, and the inside of all exterior walls, including "knee" walls, where plastering is called for, shall be covered with Stucco Board.

All interior partitions and ceilings shall be lathed with first quality Spruce lath.

All salient angles shall be protected for a height of at least 6' 0" from the floor with an approved galvanized metal corner bead.

4. Applying. The Stucco Board shall be nailed directly to the furring with four nails to each lath. Nailing for lath shall be similar.

Vertical joints shall be broken every four feet with Stucco Board, and every tenth lath where lath are used.

All angles shall be made secure. Lath will not be permitted to run through behind studs.

Corner beads must be set plumb and true and securely fixed in place.

5. Relations. This Contractor shall assure himself that all piping, wiring, etc., has been inspected and approved before proceeding with the lathing.

Plastering.

1. General Conditions. The General Conditions pertain to all trades and form a part of this Specification and the Contract, and shall be carefully read and adhered to by this Contractor.

This sub-division shall include the furnishing of all materials and labor for all plastering necessary for the proper completion of the building. 2. Work Included.

The materials and methods described under "Masonry Standards" shall apply to this sub-division and form part of this specification, except where other methods and materials are specially mentioned. 3. Materials.

All mortar for interior plastering shall, unless otherwise specified, be an approved brand of hard wall plaster mixed with sand in the proportions specified by the manufacturers.

Keen's Cement shall be finely ground and of a well and favorably known brand.

All hair shall be long cow's hair, well beaten in the open air to eliminate dust and dirt, and shall be thoroughly washed before mixing with mortar.

On all lathed surfaces apply a thick coat of mortar followed immediately with a second thin coat "darbied" to a true and even surface. 4. Applying Plaster.

The third or finishing coat shall be of plaster of Paris and lime putty applied after the second coat has thoroughly dried. The finished surface shall be left true and even, free from scratches, ridges, waves, cracks, brush marks, stains or defacements of any sort. All angles shall be sharp, straight and clean cut.

First and second coats shall extend to floors on all walls and partitions, and to all doors and window openings, finishing flush with grounds in all cases.

All ceilings below pipes and wiring shall not be plastered until all piping and wiring is in place, tested and approved.

For all exterior work shall consist of the following:— 5. Applying Stucco.

The first or scratch coat shall be composed of one (1) part Portland cement, two (2) parts sand, five (5) per cent. hydrated lime and sufficient clean cow's hair to form a proper binder.

This coat shall be applied thick with sufficient force to give a good key and shall be scratched in all directions.

The second coat shall be similar to the first, omitting the hair, and shall not be applied until the scratch coat has thoroughly dried. This coat shall be firmly pressed into the scratch coat and floated to true and even surface, using screeds if necessary to obtain a satisfactory result.

After the second coat has thoroughly dried and set, a third coat composed of one (1) part Portland cement, three (3) parts sand and gravel—gravel to pass $\frac{3}{8}$" to $\frac{1}{2}$" mesh. This coat shall be applied with special casting trowels and all surfaces left true and even. Care must be taken that any work started must be finished the same day, so as to avoid joint marks of any kind.

All patching of plaster or stucco work necessary after other trades have finished shall be executed by this Contractor as part of this contract, leaving neither crack, mark or stain. 6. Patching.

When completed this Contractor shall remove from the building and premises all staging, tools and debris of every sort arising from his work. 7. Cleaning.

This Contractor shall exercise care to avoid soiling or spattering work of other trades. Any such soiling or spattering shall be removed at this Contractor's expense, and in the manner directed by the owner.

Painting.

1. General Conditions. The General Conditions pertain to all trades and form a part of this Specification and the Contract, and shall be carefully read and adhered to by this Contractor.

2. Work Included. This sub-division shall include all materials and labour for all exterior and interior painting, staining and varnishing of woodwork and plaster, as hereinafter specified.

3. Materials. All materials shall be pure and of the best quality. This Contractor shall submit to the owner, before any material is delivered, the name of the manufacturer and the brand and quality of the material proposed.

All material approved as to brand and manufacture shall be delivered in unbroken original packages, bearing the brand and manufacturer's name, and shall be applied in conformity with the manufacturer's directions. The use of adulterants is strictly prohibited.

4. Oil. All Linseed Oil shall be pure, thoroughly settled and clear.

5. Shellac. All shellac shall be Pure Gum Shellac, dissolved in Pure Grain Alcohol.

6. Putty. All putty shall be absolutely fresh and shall be composed of three (3) parts Pure Whiting, one (1) part Pure White Lead, and enough Pure Linseed Oil and drier to produce a working consistency and proper drying qualities.

7. Paints, Stains and Varnishes. Paints, Stains and Varnishes shall be the product of favourably known manufacturers.

8. Workmanship. All painting and varnishing of woodwork, except floors, shall be done as soon as possible after the completion of the woodwork.

All painting and other finishing shall be applied by skilled mechanics.

Knots, sap, and pitch in wood to be painted shall be stopped with shellac before priming.

All paint shall be evenly spread and well brushed.

Interior woodwork shall be carefully cleaned and sandpapered, removing stains, scratches or roughness of surface. Finish shall not be applied on wet, damp, dirty, rough or otherwise imperfect surfaces, and succeeding coats shall not be applied over others until the preceding coats are thoroughly dry.

All varnish shall be evenly and smoothly flowed on, leaving no surplus.

Plaster in all cases shall be thoroughly dry before painting.

9. Protection. This Contractor shall protect his work against damage and shall also protect the work of all other trades.

Upon completion remove from the building all materials and debris arising from the work of this trade, removing all paint from adjoining surfaces, hardware or glass, leaving the whole in a workmanlike and finished condition. 10. Cleaning.

Samples of painted, stained or varnished woodwork and of painted plaster shall be made, and the approval of the Owner obtained before proceeding. 11. Samples.

Glazing.

The General Conditions pertain to all trades and form a part of this Specification and the Contract, and shall be carefully read and adhered to by this Contractor. 1. General Conditions.

This sub-division shall include all material and labour for glazing of all sash and doors throughout, including doors of cupboards, etc. 2. Work Included.

All materials shall conform to the following requirements:— 3. Material.

Putty:

Shall be as specified under Painting.

Glass:

All glass less than three square feet in area shall be single strength. Glass in excess of three square feet, but under six square feet in area, shall be double strength. Glass in excess of six square feet in area shall be ¼-inch plate. All single and double strength glass shall be reasonably free from waves, bubbles, and other defects. Plate glass shall be free from defects of any kind and even in thickness. Where leaded or other decorative glass is required, the character and design shall be as selected.

All glass, except for doors, shall be back puttied, secured with glaziers' points and all edges made watertight with putty evenly and smoothly run. Glass in all doors shall be set with moulded glass stops. 4. Setting.

Extraordinary precaution shall be taken for the protection of all glass, and at completion any breakages shall be replaced. 5. Breakage.

At completion, or when so ordered, all glass shall be cleaned of all oil, paint, or putty marks, washed and left perfectly clean. 6. Cleaning.

Plumbing.

The General Conditions pertain to all trades, and form a part of this Specification and the Contract, and shall be carefully read and adhered to by this Contractor. 1. General Conditions.

This sub-division shall include the furnishing and installing complete of all stacks, drainage, vents, service water, fixtures, etc. 2. Work Included.

The entire work shall be executed as described under paragraphs of description, instructions, requirements, etc., using particular materials and apparatus as specified under the following headings:— 3. Materials and Workmanship.

HEADINGS:

Pipe and Fittings.
Valves.
Ferrules.
Soldering Nipples.
Floor, Ceiling and Partition Plates.
Drains and Traps.
Cleanouts.
Painting.
Fixtures.

4. Relation to Other Trades. This Contractor shall confer with all other Contractors whose work may affect his installation, and arrange his equipment in proper relation with the building construction and the architectural finish. Special care shall be taken in the installation of all equipment where same is to be concealed, to see that it comes within the finished lines of floors, ceilings, partitions or walls.

This Contractor shall notify all other Contractors of all openings, anchors, hangers, excavating or other provision necessary for the installation of his work, and shall furnish such anchors, hangers, etc., and information regarding openings and excavating in ample time, so that proper provision can be made for same. Failure to comply with this requirement on the part of this Contractor will not relieve him of the cost of cutting for openings, installing anchors, hangers, etc., and excavating at a later period, and the subsequent patching, backfilling, etc., thereby required.

5. Certificates, Fees, etc. This Contractor shall give all necessary notices, obtain all necessary permits, and pay all fees in order that the work hereinafter specified may be carried out, and he shall furnish any certificates necessary as evidence that the work installed conforms with the laws and regulations of the City and Province in which this work is carried on.

6. Guarantees. This Contractor shall guarantee all material and workmanship used in the work to be of the best quality obtainable in strict accordance with the specifications and free from any defects. Any defects which may appear in any of the work within the year after the acceptance, ordinary wear and tear excepted, shall be repaired and replaced by this Contractor, without any additional cost to the Owners. Where such defects occur, this Contractor shall be held responsible for all costs incurred in making the defective work good, and all injuries to plaster, wood or other finish, caused by such replacements and repairs of defective work, shall be replaced and repaired in first-class condition by this Contractor at his own expense.

Description of System.

7. Sewerage, Drainage and Waste. This system shall consist in general of a house sewer line starting at the street sewer and continued into the building under the basement floor, with running trap, fresh air vent and branches from same carrying off all sewerage, drainage and waste from all plumbing fixtures and

risers, floor drains and all other apparatus requiring drain connection. Soil and waste branches from fixtures throughout upper floors shall be connected through branch lines into risers discharging into house sewer.

8. Vents. Back vents shall be provided from all fixture traps, such vents to be carried to a point three (3) feet above the roof line, or joined to soil or waste stacks above the highest fixture connection. The bottom of all vent stacks shall also be joined to soil or waste stacks below the lowest fixture connection.

9. Service Water. A connection shall be made to the water main and run underground to a point inside the building, where a stopcock and drip shall be installed. The line shall be continued from this point to the fixtures, including hot water boiler. From the hot water boiler a line shall be run to the sink (laundry tubs when tubs are indicated), basin and bath.

Standard Requirements.

10. General Instructions. This Contractor shall be held responsible for all measurements throughout and for any alterations necessary in the arrangement of pipes or the location of same, in order to make them come within the finished lines of wall or ceiling. No pipe fittings or work of any kind shall be covered up or hidden from view before it has been examined and approved by the Owner. Soil, waste and vent stacks, water leaders and water risers, shall be true and plumb.

All soil or vent pipes where they pass through the roof must be properly flashed with five-pound sheet lead or 16-ounce copper and made watertight. That portion of metal resting on roof must be at least 20 inches square, and that portion extending up pipe, if used, must be 10 inches high.

In addition to the points specified or shown, shut-off valves shall be provided wherever necessary for the proper operation of the system.

Where reductions in pipe sizes take place at fittings, reducing fittings must be used. Bushings will not be accepted.

All off-sets in soil, waste and vent stacks, and lines shall be made with ⅛ bends, and any off-sets above the highest fixture shall be made at an angle not less than 45 degrees. Changes in direction shall be made by the use of proper fittings, as no screwed joints or bowed pipes will be permitted.

Connections between vertical and horizontal pipes shall be made with ⅛ and ¼ bends. Long ¼ bends and long T Y's may be used where their use is permitted by the Plumbing Regulations. Short ¼ bends, double hubs, short roof increases, straight crosses, double T's or double T Y's shall not be used on any part of the work. No branch fitting other than a full Y or Y and ⅛ bend shall be used on any soil or waste pipe running in a horizontal direction.

Lead pipe shall not be used for branches to any fixtures except the short lead connections to water closets and slop sinks.

All joints for cast iron soil pipe and fittings shall be made of packed oakum and soft molten lead well caulked. New lead shall be used in all cases for this work, and in no case shall old lead pipe and

other materials be melted up and used. No putty or cement shall be used about these joints.

Cleanouts shall be provided in all sewers, soil stacks, waste and drain pipes at all points where obstructions may be formed. All such cleanouts shall be full size of pipe up to 4 inches in diameter and not less than 4 inches in diameter for larger pipes. Cleanouts shall be gas-tight and accessible.

All joints necessary in lead pipe and between lead pipe and brass fittings shall be wiped solder joints. Connections between cast iron soil pipe and lead pipe shall be made by means of cast brass ferrules and wiped solder joints, the lead pipe being extended through the ferrule, and a flange turned out and up the outside of the pipe, with the wiped solder joint at the outside of the ferrule.

Connections between wrought iron and lead pipe shall be made by means of cast brass soldering nipples screwed on to wrought iron pipe and wiped solder joints.

Connections between wrought iron pipes and cast iron pipes shall be made by caulking the threaded end of the wrought iron pipe into the hub of the cast iron pipe.

Connections between wrought iron vent pipes and cast iron pipes shall be made by means of cast iron fittings with branch tapped for iron pipe size.

All joints in wrought iron pipe shall be made with screwed joints set in red lead.

Connections of brass pipe and between brass pipe and iron pipe shall be made by means of screwed joints, the threaded connections on brass pipe to be the same as iron pipe threads for pitch and taper. No slip joint couplings will be permitted on sewer side of trap. All traps shall be well supported and shall be true in respect to their water levels and shall have a seal of not less than 1½ inch. No lead traps will be allowed on any part of the work.

11. Drain, Soil and Waste Connections to Fixtures.

All fixtures throughout shall be connected to waste, soil or drain lines, with branches and traps of not less than the following inside diameters:

Water Closets	4"
Basins	1¼"
Sinks	1½"
Baths	1½"
Laundry Tubs	1½"
Floor Drains	4"

12. Vent Connections to Fixtures.

Vent shall be installed for each trap throughout the work. These vent connections shall be made through branches of not less than the following diameters:

Water Closets	3"
Basins	1¼"
Sinks	1¼"
Bath Tubs	1¼"
Laundry Tubs	1¼"

All branch vent connections shall be made as near the trap as possible. No trap vent pipe shall be less than four inches, inside diameter, where it passes through the roof, and all vent pipes must continue to rise after leaving the trap and pass out through the roof or connect with soil pipe above the highest fixture. Where they are required to be increased, they shall be increased at a point not less than 1 foot below roof line, by means of an increase not less than 9 inches long and extended the required height above the roof line in the larger size.

13. Hot and Cold Water Connections to Fixtures.

Branches for hot and cold water shall be provided to individual fixtures requiring water. These connections shall not be less than the following:

Supply Branches.	Less than 20 lbs. pressure.	More than 20 lbs. pressure.
Water Closets	¾″	½″
Basins	½″	½″
Bath Tubs	¾″	½″
Sinks	¾″	½″
Laundry Tubs	¾″	½″
Main Supply	1″	¾″
Hose Connection (if any)	1″	¾″

The branch connection from the flush tank to the W.C. bowl shall be 1¼ inch in all cases.

Service pipe shall in all cases be one size larger than the tap in the street main.

14. Pitch of Piping.

The house drain and all horizontal lines of rainwater leaders, and all soil and waste piping, shall be graded in the direction of flow, with a pitch of not less than 1 inch in 4 feet.

All horizontal branches of vent piping shall be graded with a pitch of not less than 1 inch in 4 feet towards the fixture or fixtures to which they connect.

All horizontal branches of hot and cold water shall be so graded that they may be completely drained.

15. Securing of Pipes.

All vertical lines of piping shall be firmly supported and held in place by iron pipe hooks or straps placed immediately below the hubs, couplings or fittings, and securely fastened to walls or floors.

16. Overflow for Fixtures.

Suitable provision shall be made for overflows from all plumbing fixtures, and connections to such overflows shall be made in the waste lines on the fixture side of the trap.

17. Tests.

After all drain, soil, waste, vents, hot water and cold water pipes have been placed in position, and all branches installed, but before any fixtures have been set and connected, or the main house drain permanently connected to the sewer, the tightness of all joints, and the soundness of all pipe shall be tested in the presence of the Owner in the following manner.

18. Soil, Waste, Drain and Vent Pipes.

All openings and pipe ends throughout the work shall be securely closed by means of approved plugs, and the entire pipe system shall be filled with water to the top of the highest opening, and this water shall stand at this same level for not less than 2 hours.

Another test shall be made of the entire plumbing system after the fixtures are set and the house drain connected to the sewer, this test consisting of turning the water into all pipes, fixtures and traps, in order to detect any imperfect material or workmanship.

19. Requirements for All Tests. If the tests as required above reveal any leaks or defects, such leaks or defects shall be repaired immediately and the tests repeated until satisfactory results are obtained. The above mentioned tests shall not relieve this Contractor from additional tests which may be required by any Municipal Department, under whose jurisdiction this work may come.

Standard Requirements.

20. Pipe and Fittings. Sewer from street sewer to a point three feet outside the wall of building shall be 6 inches vitrified clay tile.

From this point all sewer, drain, soil, waste and vent pipes and fittings shall be standard weight cast iron.

21. Hot and Cold Water. Pipe except as provided for below grade shall be best grade genuine wrought iron pipe, galvanized, as manufactured by . . . . .

Pipe where buried underground shall be " Mark A lead pipe of size heretofore specified, weighing not less than 4 pounds 10 ounces per yard for ½-inch pipe, 9 pounds per yard for ¾-inch pipe, and 12 pounds per yard for 1-inch pipe.

Fittings exposed in toilet rooms or around in individual fixtures shall be cast brass fittings, nickel plated or otherwise finished to conform with the finish of metal on fixtures.

22. Valves. Shut-off valves shall be brass of the globe pattern and shall be equal to those manufactured by . . . . . .

23. Ferrules. Ferrules shall be extra heavy cast brass, bell-shaped, and not less than four (4) inches long.

24. Soldering Nipples. Soldering nipples shall be of cast brass of first grade brass tubing, iron pipe size.

25. Floor, Ceiling and Partition Plates. Plates shall be of iron, finished for painting, and shall be used where pipes pass through floors, ceilings and partitions.

26. Drains and Traps. Floor drains shall be of the combined drain and trap pattern with cast iron bodies and strainers, similar to . . . . . 6 inches by 6 inches.

House sewer traps shall be extra heavy cast iron deep seal running traps coated with Asphaltum, with cleanouts and connections for fresh air vent.

See specifications for lavatories under " Toilet Fixtures " for fixture traps.

27. Cleanouts. Cleanouts shall consist of T.Y. or trap fittings, full size of the pipe up to four (4) inches in diameter and not less than four (4) inches for larger sizes. They shall be closed gas tight with extra heavy brass plugs

crewed into heavy brass ferrules caulked into the hubs of traps or ttings.

Cleanout plugs to have square nuts one (1) inch in height and one nd one-half (1½) inches square.

Cleanouts located below the floor shall be extended up and set flush ith the finished floor.

Pipes, Fittings and Valves. 28. Painting.

All exposed pipes, fittings and valves, except where brass or nickel lated, shall be painted three (3) coats, first coat of lead and oil and wo (2) coats of Graphite Paint, color as directed.

All concealed pipes shall be painted one (1) coat of lead and oil.

Materials and Workmanship.

Materials and workmanship as specified in the general specification or "PAINTING" shall apply to this trade.

The following list of fixtures is not intended to restrict the choice 29. Fixtures.
f fixture to any one manufacturer. The selection is intended to suggest standard quality and design suitable to work of this class.

All plumbing fixtures shall be in accordance with the following:—

Water Closets.

Syphon-action bowls of an approved type, with low down oak arnished finished tanks. N.P. post hinge seat and covers, complete ith brass floor flange.

Basins.

18-in. by 12-in. Enamel Iron Basins similar to Plate J.R. 700, with hina index low down basin cks. and N.P. ⅜-in. brass supply pipes and ¼-in. N.P. ½ S. trap.

Baths.

5 ft. x 2½ ft. or 1¾ in. Roll Rim Enamel Baths with china index N.P. double bath cks. Tail piece threaded for I.P. and N.P.C.W. and O.

Sinks.

18 in. x 24 in. Enamel Roll Rim Sinks in one piece, with N.P. djustable flange Bibb for ½ in. I.P. and 1½ in.-½ S. Lead Traps.

Range Boilers.

30 Gallon galvanized Boilers with 12-inch stands.

Laundry Trays.

2 Part Cement Laundry Trays with plug and coupling iron stands, N.P. ½-in. compression Bibbs.

Tray and Sink.

Similar to F371 combination sink and laundry tray in one piece ith N.P. compression flange Bibb I.P. and 1½ in. N.P. ½ S. Traps o wall.

Heating.

1. General Conditions. The General Conditions pertain to all trades and form a part of this Specification and the Contract, and shall be carefully read and adhered to by this Contractor.

2. Work Included. This subdivision shall consist of the furnishing and installing complete, a gravity Hot Air Heating system, all as herein specified, as may be required to properly complete the work.

3. Relations to Other Trades. This Contractor shall confer with Contractors for other trades and arrange his equipment in proper relation to the building construction, architectural finish, and other apparatus. Special care shall be taken in the installation where same is to be concealed to see that it comes within the finished lines of floors, ceilings, walls or partitions.

This Contractor shall notify other contractors of all openings or other provision necessary for the installation of his work, and shall furnish such information in ample time so that proper provision can be made. Failure to comply with this requirement on the part of this Contractor will not relieve him of the cost of cutting at a later period and subsequent patching, etc., thereby required.

4. Certificates, Fees, etc. This Contractor shall give all necessary notices and obtain all necessary permits and pay all fees, in order that the work hereinafter specified may be carried out, and he shall furnish any certificates necessary as evidence that the work installed conforms with the laws and regulations of the City and Province in which this work is carried on, and the requirements of the Inspection Bureau of the Canadian Fire Underwriters' Association.

5. Guarantee. This Contractor will be required to furnish a written guarantee that the system as installed under proper management will heat the Living Room, Dining Room and Bathroom to a temperature of 70 degrees Fahr., and the Bedrooms to a temperature of 65 degrees when the outside temperature is at Zero.

This Contractor shall also guarantee all materials and workmanship to be the best of the quality specified and free from any defects. Any defects which may appear in any of the work within one (1) year after acceptance, ordinary wear and tear excepted, shall be repaired or replaced at this Contractor's expense, including all costs for patching or damage to other trades caused by such replacements.

6. Description of System. Heating shall be accomplished by means of circulated air heated by furnaces, each of at least (insert capacity required) cubic feet capacity. The heated air shall be supplied to various rooms in the most direct manner possible, through ducts and registers.

Fresh air supply shall be taken from an outside point and cold air shall be exhausted from the halls.

7. Sheet Metal Work. All ducts and flues shall be thoroughly stiffened and supported in place.

All pipes in basements shall be round, and where they pass through partitions or walls, shall be provided with collars.

All leaders shall be provided with dampers and shall be tagged indicating room it supplies.

All turns in leaders shall be made with elbows of not less than four pieces.

All stacks in partitions shall be oval or rectangular in cross section.

All hot air pipes and stacks shall be bright tin.

Cold air pipes or ducts shall be 26 gauge galvanized iron.

Furnace smoke pipe shall be 24 gauge galvanized iron.

All horizontal pipe shall have a pitch of at least 1½ in. to 1 ft.

8. Insulation for Stacks.

All stacks shall be insulated with two (2) layers of asbestos totalling at least 1-16 in. in thickness. This asbestos shall be pasted or secured in other approved manner.

Standard Materials.

9. Furnace.

All furnaces shall be the product of a well and favorably known manufacturer.

10. Register Boxes and Registers.

Register Boxes and Registers shall be provided at each outlet. They shall be floor or wall registers as indicated.

Register Boxes shall have an iron frame to receive Registers and be fitted with louvres.

All registers shall be cast iron, japanned, square lattice pattern, and equal to those of . . . . . manufacture.

Electric Wiring.

1. General Conditions.

The General Conditions pertain to all trades and form part of this specification and contract and shall be carefully read and adhered to by this Contractor.

2. Extent of Work.

This sub-division shall include the execution and completion of a complete system of electric wiring as hereinafter described and shown on plans together with the furnishing of all material, appliances, tools, scaffolding, apparatus and labor necessary for said execution and completion, except as otherwise stated.

3. Materials and Workmanship.

The entire work shall be executed as described under paragraphs of instructions, requirements, etc., using particular materials as specified under the following headings:—

Headings:

Local Switches.
Receptacles and Plugs.
Plates for Switches, Receptacles.
Fuses.
Service Boxes.

4. Relations to Other Trades.

This Contractor shall confer with all other contractors whose work may affect his installation and he shall arrange his equipment in proper relation to the building construction and with the architectural finish. Special care shall be taken in the installation of the equipment where same is to be concealed that it may come within the finished lines of the floor, ceiling or walls.

This Contractor shall notify all other contractors of all openings, anchors or other provisions necessary for the installation of his work and shall furnish such information in ample time so that proper provision may be made for same. Failure to comply with this requirement on the part of this Contractor shall not relieve him of the cost of cutting at a later period and the subsequent patching, etc., and making good required.

5. Rules and Regulations. All work in this contract shall be done in strict accordance with the Rules and Regulations of the Ontario Hydro-Electric Power Commission.

Upon the completion of the work a Certificate of Inspection shall be obtained from the Local Inspector of said Department. This Contractor shall pay all necessary fees connected with this work.

6. Location. The Plans show the approximate location of all lighting outlets but the price bid shall include the changing the location of any or all outlets to meet the exigencies of construction or design, as the Owner may direct. No extras shall be allowed for such change of location, unless the distance exceeds ten (10) feet.

Description of System.

7. Lighting. This shall be of a type to suit current available.

This system shall consist in general of the following:—

Services shall in no case be run in less than ¾" conduit which shall terminate immediately at the point of entrance in each house in an approved double-compartment main service box; one compartment containing the main switch and cut-out and the other the branch cut-outs, which shall provide for sufficient circuits to subdivide the outlets in the house as required by Rule D, page 25, Fifth Edition of Rules and Regulations, Hydro-Electric Power Commission and following paragraphs.

8. Number of Circuits. All lighting outlets in each house shall be on as few circuits as possible, but in no case on less than two. No set of lamps requiring more than 660 watts, where grouped on one fixture, or on several fixtures or pendants, shall be dependent on one cut-out.

9. Drop of Potential. The drop of potential from the street main to the farthest light shall in no case exceed two (2) per cent.

Standard Requirements.

10. General Instructions. All wires and cables shall be installed in the manner known as "Concealed Knob and Tube" work, which shall consist of wires supported by split porcelain knobs, securely screwed in place, where wires run parallel to joists or studs, and by porcelain tubes where wires pass through joists, studs, etc. Where wires are exposed they shall be encased in bushings of flexible tubing, projecting at least 3 inches beyond floor plate or bridging. All wires shall be run taut, in straight lines, parallel or perpendicular to the walls, and there shall be no kinks or slack places in the wire except where necessary to relieve bushings or joints from strain. To avoid possible strain there shall be provided a knob adjacent to each joint at each turn in the wire and adjacent to each outlet.

On vertical runs all wires shall be protected from plaster droppings by tubes which extend at least 4 inches above the horizontal timbers which have been pierced.

11. Tests. All wires are to be carefully tested out after building is completed and before finished floors are laid for the detection of errors in connections or derangements due to other mechanics at work in the building.

12. Inspection. This Contractor is to conform to all rules and requirements as regards electrical inspection. He shall notify the Inspector in writing before commencing the work and shall make any and all changes or alterations in the work as may be required by the Inspector without expense to the Owner.

13. Responsibility. This Contractor shall be responsible for all wires and connections until the building is complete and the work accepted.

Where more than one circuit is brought into the same outlet each shall be separated and tagged.

14. Outlets. Crow's foot supports shall be provided at all lighting outlets in walls or ceilings.

15. Wires and Cables. Wires must not be of a smaller size than No. 14 B & S Gauge, except as allowed by law for fixture work and pendant cord, where No. 18 B. & S. Gauge will be a minimum.

Standard Materials.

16. Materials. Wherever materials are described under specific names it shall be understood that such name is only referred to as fixing a standard of their character and efficiency. All material required under this contract and specification and the drawings referred to herein shall be new and the best of their respective kinds. All workmanship shall be first class.

17. Local Switches. Local switches, unless otherwise noted, shall be push button single pole switches with mechanism mounted on a movable plug. Where two or more switches are located together they shall be installed in gang boxes. Switches shall be equal in quality to the . . . . . detachable mechanism switches.

18. Receptacles and Plugs. Receptacles for wall or base plug shall be of the flush type with self-closing openings and arranged so that extensions may be used with lamp sockets or plug receptacles by using adapters.

Any wall receptacle shown on drawings shall be connected to a separate circuit carried direct to the main cut-out box in the basement, and in no case shall they be attached to lighting circuits.

Each receptacle shall be provided with a plug and an adapter. Receptacles and plugs shall be of an approved type.

19. Plates for Switches, Plugs, Receptacles, etc. Each local switch and plug receptacle shall be provided with a solid brass face plate attached by means of two screws. Plates shall be provided with openings suitable to the mechanism which they conceal and shall be finished flush brass.

20. Fuses. A complete set of fuses shall be supplied and placed at the time of acceptance. All fuses shall be of a type as specified in the Rules and Regulations of the Ontario Hydro-Electric Power Commission.

21. Service Boxes. A Service Box shall be provided for each house as required by law, complete with meter loops to fit type of meter installed or required by the Municipality. Such box shall be equal in quality to the . . . . Service Box.

Appendix X.

DRAWINGS.

The various types of houses illustrated have been prepared following a careful study of requirements necessary to assure healthful living conditions, and are submitted, not as models to be copied, but rather as indicating the lines along which desirable inexpensive houses may be built.

TABLE OF DRAWINGS.

Detached Houses.

D-1. Drawings 1, 2, 3.

FIVE ROOM HOUSE: Living room, kitchen with dining alcove, three bedrooms and bathroom.

In this plan the bathroom is located on the first floor. The small hall provides direct access from stairs to bathroom, and also provides communication to each room.

The house is illustrated in frame construction, with exterior walls of shingles or clapboards, having a wide exposure. Very satisfactory results could also be obtained with stucco for exterior walls.

D-2. Drawings 1, 2.

SIX ROOM HOUSE: Living room, kitchen, two bedrooms and bathroom on first floor, with two additional bedrooms in attic.

This house is suited only to localities where land values are low enough to permit of a lot of fifty feet frontage.

The drawings illustrate an exterior of brick and stucco. An exterior entirely of stucco, or of shingles, would be equally satisfactory.

It should be noted that in planning houses two rooms deep, the conditions for detached houses are very little different from semi-detached. The plans of semi-detached houses—S-D-1, S-D-2, S-D-2a—are, therefore, quite adaptable to detached houses.

D-3. Drawings 1, 2, 3.

D-4. Drawings 1, 2.

FARM HOUSES: These drawings illustrate suggestions for houses to accommodate farm help, or, in some cases, may be suitable for small farm houses.

The plan provides living room, kitchen, pantry, summer kitchen and woodshed on first floor, and three bedrooms on the second floor.

The elevations suggest a frame building with exterior of shingles or clapboard having a wide exposure.

Semi-Detached Houses.

S-D-1. Drawings 1, 2.

SIX ROOM HOUSE: Living room, dining room and kitchen on first floor. Three bedrooms and bathroom on second floor.

It is also possible to adapt this plan to a detached house, although from the exterior more satisfactory as illustrated.

The drawings contemplate a stucco exterior, but will present a very satisfactory appearance in a combination of brick and stucco, stucco and shingles, or entirely of shingles.

S-D-2. Drawings 1, 2.

Five Room House: Living room, kitchen and bathroom on first floor, with three bedrooms on second floor.

The exterior suggests stucco. Equally satisfactory results may be obtained using brick for first storey with shingles above. An exterior entirely of shingles would also present a very attractive appearance.

S-D-2a.

This is an alternate suggestion for treating the same house. This elevation eliminates the bay window and overhanging gable on the second storey.

The drawing indicates a combination of brick and stucco, but the material suggested for S-D-2 will apply equally well.

Group Houses.

G-1. Drawings 1, 2, 3, 4, 5.

A Six Family Group: Combining four 4-room houses and two 6-room houses.

The Six Room House is similar to S-D-1.

The Four Room House provides a living room and kitchen on the first floor, with two bedrooms and bathroom on the second floor.

G-1-a.

Illustrates, on the same frontage, a Five Room House, placing one bedroom in the attic, as an alternate to the Four Room House Group (G-1).

G-1-b.

This is a suggestion for an interior Five Room Group House, planned on a wider frontage. The hall, direct to the front entrance, avoids using the living room as a thoroughfare. The dining room-kitchenette combines dining room and kitchen, yet at the same time gives a certain amount of separation.

A large number of group houses similar to this type are now under construction in Halifax, N.S. This plan will combine readily with the Six Room House at the end of Group G-1.

G-2.

This is a suggestion for adapting the plan illustrated under S-D-2 to a group house. It may be combined with the Six Room House, illustrated at the end of group G-1, or will combine with G-1-b.

These plans are also adaptable to the detached house.

Duplex Houses.

DX1. Drawings 1, 2, 3.

These drawings illustrate an Eight Family, Four-Room Duplex Group, providing living room, kitchen, two bedrooms and bath.

DX2. Drawings 1, 2, 3.

These drawings illustrate a Four Family, Five-Room Duplex Group, providing living room, kitchen, three bedrooms and bath.

Both of the suggestions for Duplex Houses are illustrated in brick, with a portion of the second storey finished in stucco on brick.

It is recommended that houses of this type should not be erected in frame construction, owing to the greater fire hazard.

Drawing No. 6.

Illustrates in detail suggestions for front and rear porches indicated at smaller scale on Drawings G-1, S-D-1, S-D-2, S-D-2A.

Drawing No. 7.

Details of Casement Windows.

Drawing No. 8.

This drawing suggests several types of interior and exterior doors which are recommended for inexpensive houses.

Drawing No. 9.

Suggestions for Kitchen Cabinets.

Drawing No. 10.

Arrangement of houses referred to on page 94.

Drawing No. 11.

Suggests grouping for Duplex Houses.

PERSPECTIVE DRAWINGS.

Drawing A.

Illustrating portion of Six Family Group G-1 and Semi-Detached House S-D-1, page 97.

Drawing B.

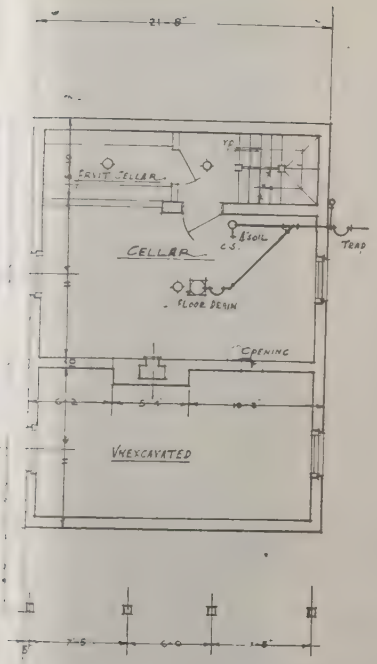
Illustrating Semi-Detached House, S-D-2, page 98.

Drawing C.

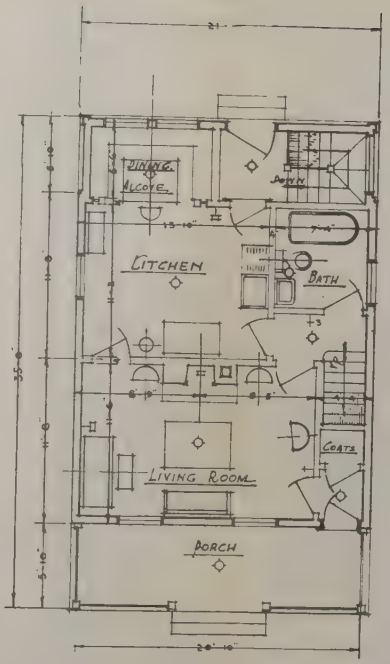
Illustrating both types of Detached Houses, page 100.

Drawing D.

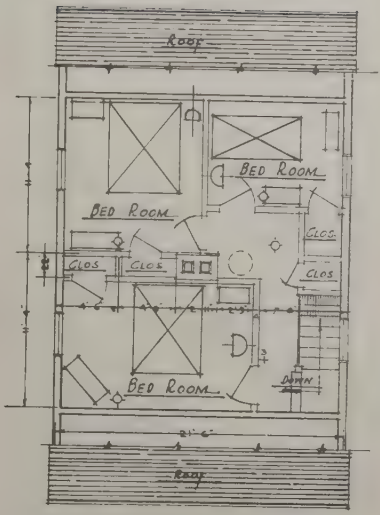
Illustrating Eight Family Four-Room Duplex Group D-X-1, facing page 104.



BASEMENT PLAN.



FIRST FL. PLAN.



SECOND FL. PLAN.

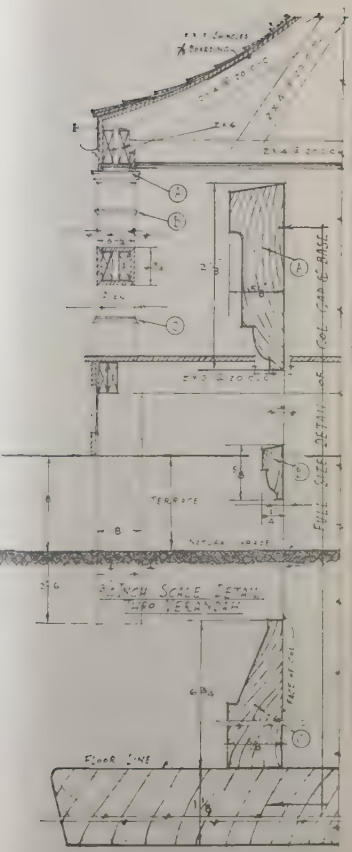
ONTARIO HOUSING COMMITTEE.		
	PLANS	SCALE 1/8" = 1'-0"
DATE DEC. 1918	5 R.M. DETACHED HOUSE No. 1 of 3 DRAWINGS.	D. 1

REAR ELEVATION

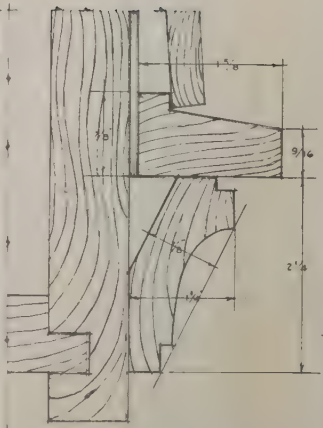
SIDE ELEVATION

FRONT ELEVATION.

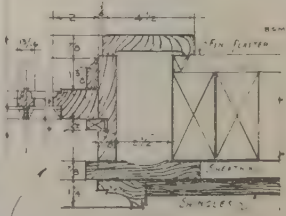
ONTARIO HOUSING COMMITTEE.		
ELEVATIONS		SCALE. 1/8"=1'-0"
5 R.M. DETACHED HOUSE		D.1
DATE DEC 1918	No 2 of 3 DRAWINGS.	



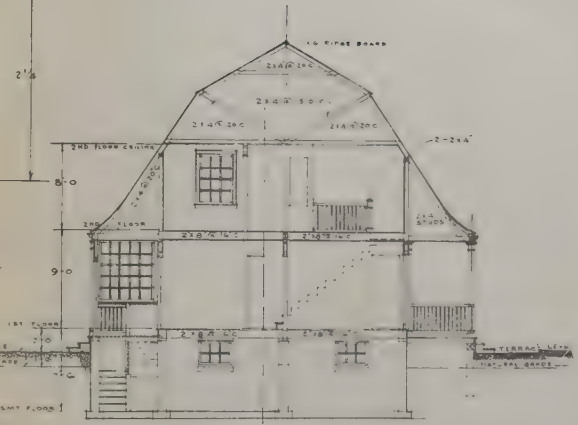
3 Inch Scale Detail Thro Terrace



Full Size Detail Thro Window Head (Exterior)

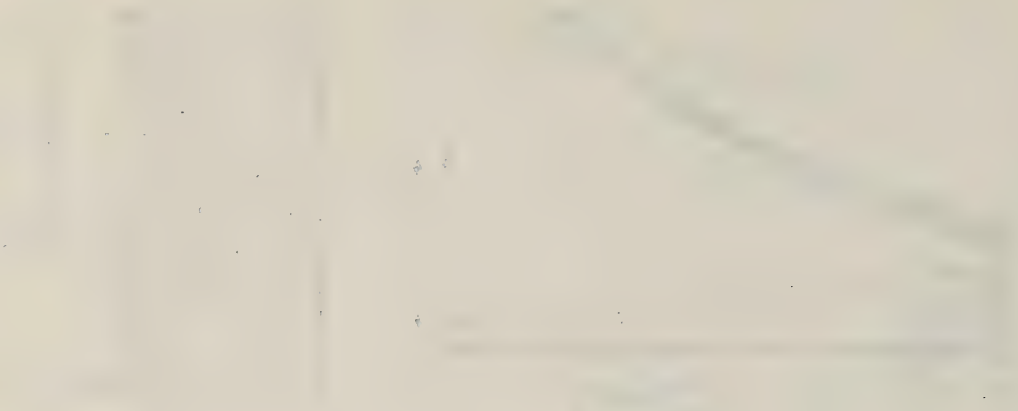


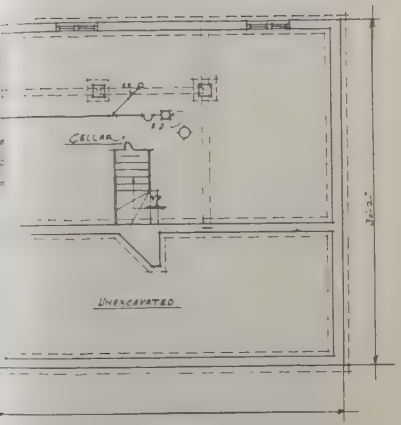
3 Inch Scale Detail Thro Window Jamb



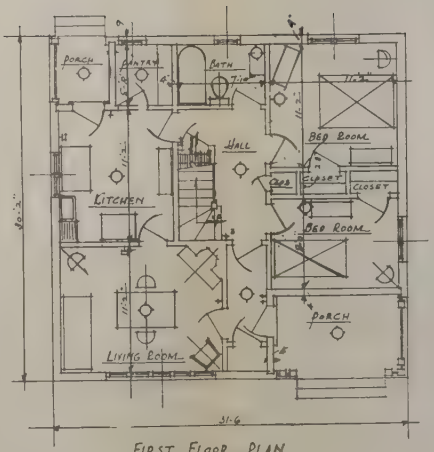
Longitudinal Section

Ontario Housing Committee		
Longitudinal Section	Scale	1/8" = 1'-0"
Details		3" & 1" F.S.
Date Dec 1918	5 Em Detached House No 3 of 3 Drawings	D-1

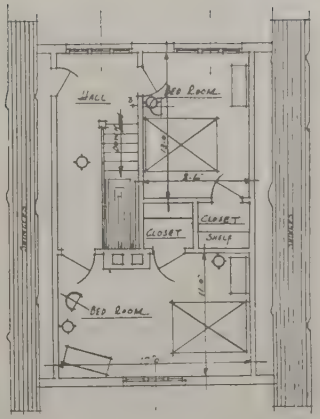




CELLAR & FOUNDATION PLAN



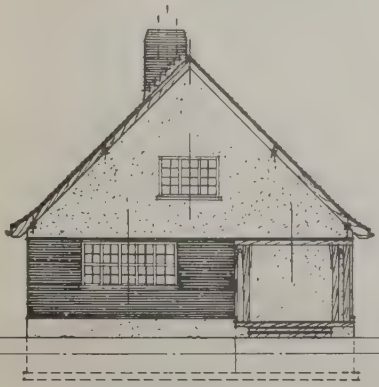
FIRST FLOOR PLAN



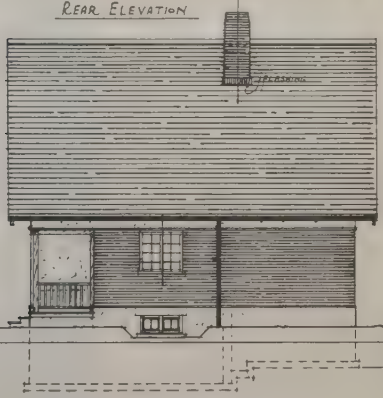
ATTIC PLAN

ONTARIO HOUSING COMMITTEE	
PLANS	SCALE 1'-0"
6 RM DETACHED HOUSE	D-2
DATE OCT 1-18	

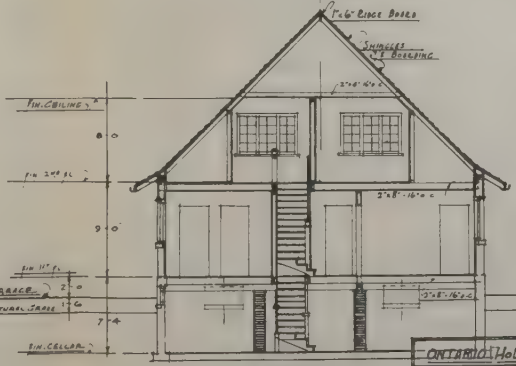
REAR ELEVATION



FRONT ELEVATION

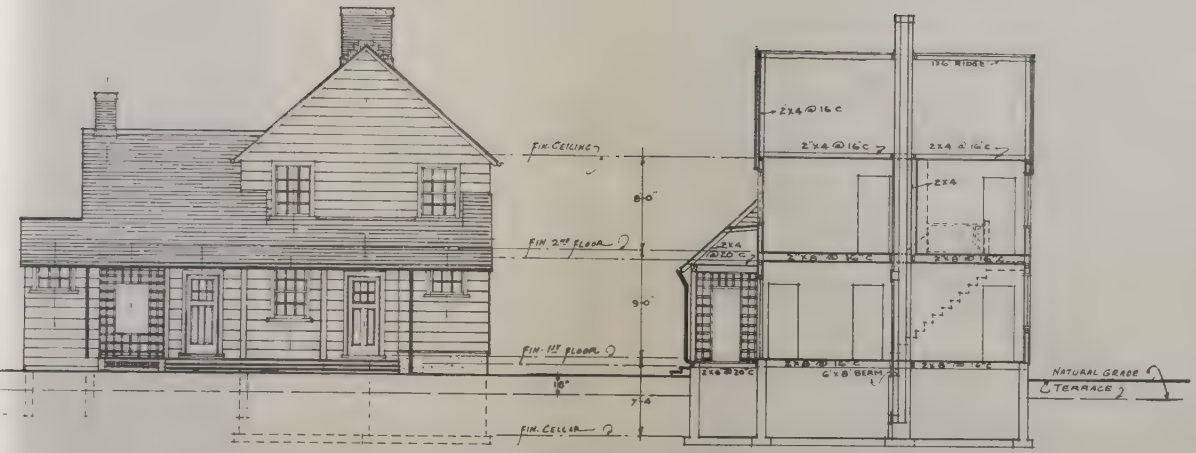


SIDE ELEVATION



SECTION

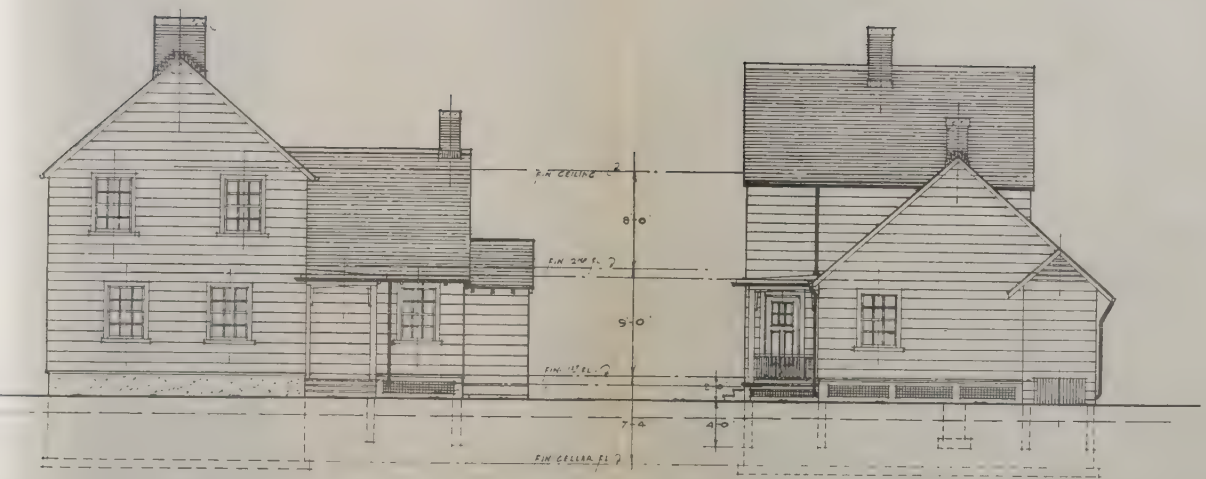
ONTARIO HOUSING COMMITTEE	
ELEVATIONS & SECTIONS	SCALE 1/8"=1'-0"
6 ROOM DETACHED HOUSE	D.2
DATE DEC 1918 — No 2 of 2 DRAWINGS	



REAR ELEVATION

SECTION

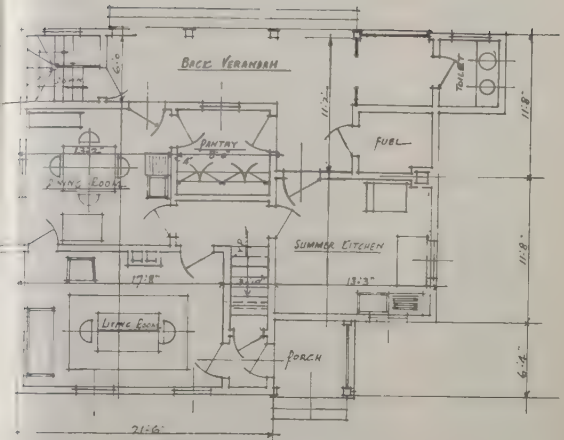
ONTARIO HOUSING COMMITTEE		
HOUSE FOR FARM HELP		SCALE 1/8"=1'-0"
ELEVATION & SECTION		D-3
DATE DEC 1918	No 1 of 3 DRAWINGS.	



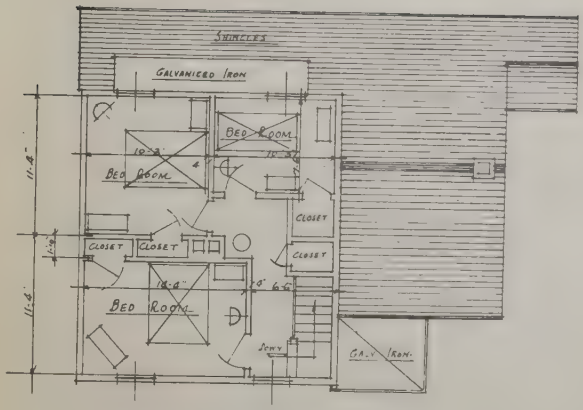
FRONT ELEVATION

SIDE ELEVATION

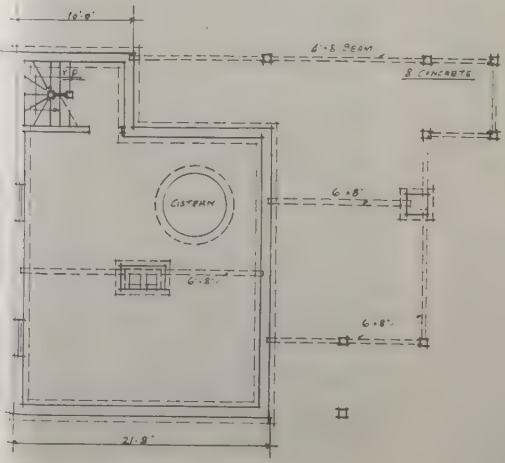
ONTARIO HOUSING COMMITTEE		
HOUSE FOR FARM HELP		SCALE 1/8"-1'-0"
ELEVATIONS		D-3
DATE DEC 1918	No 2 of 3 DRAWINGS.	



FIRST FLOOR PLAN

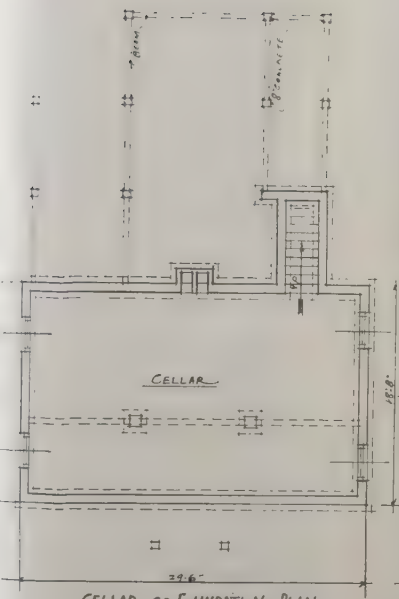


SECOND FLOOR PLAN

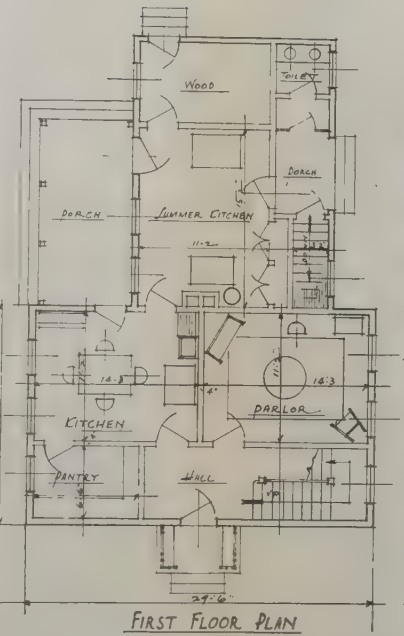


CELLAR & FOUNDATION PLAN

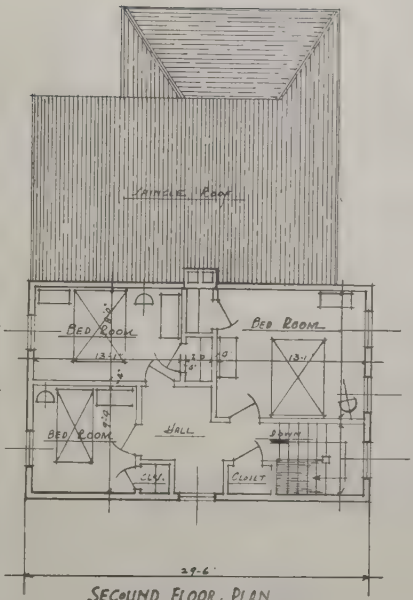
ONTARIO HOUSING COMMITTEE		
HOUSE FOR FARM HELP		D.3
PLANS		SCALE 1/8"=1'-0"
DATE DEC 1918	No 3 of 3 DRAWINGS	



CELLAR & FOUNDATION PLAN

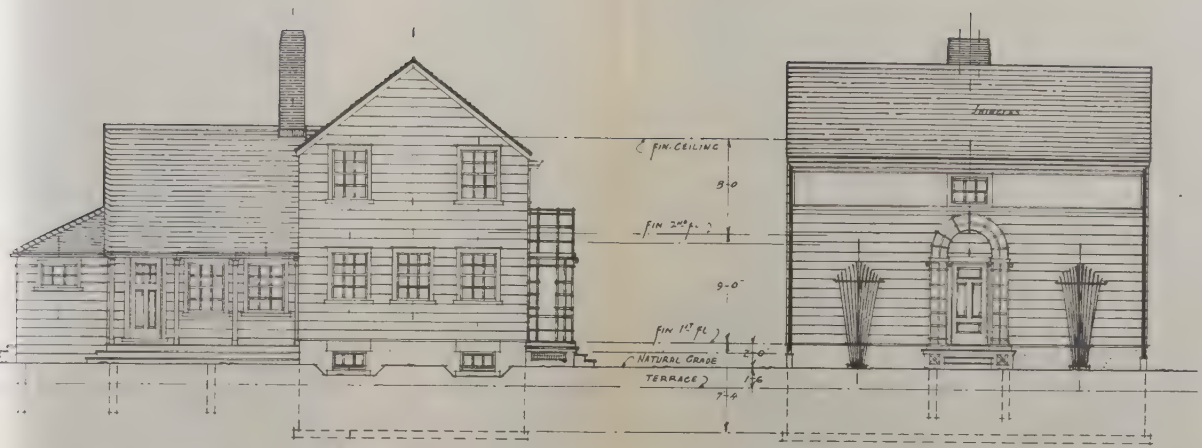


FIRST FLOOR PLAN



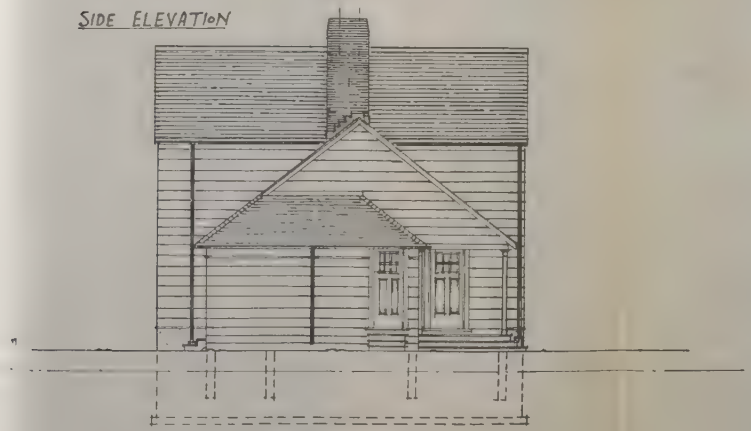
SECOUND FLOOR PLAN

ONTARIO HOUSING COMMITTEE		
PLANS		SCALE 1/8"=1'-0"
HOUSE FOR FARM HELP		D 4
DATE DEC 19/18	No 1 of 2 DRAWINGS.	



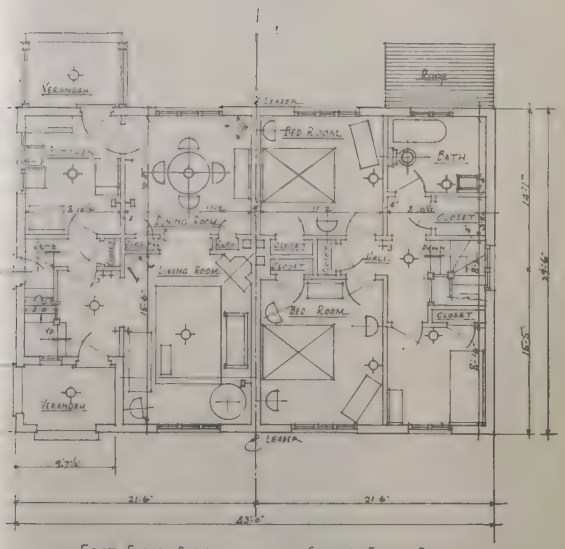
SIDE ELEVATION

FRONT ELEVATION



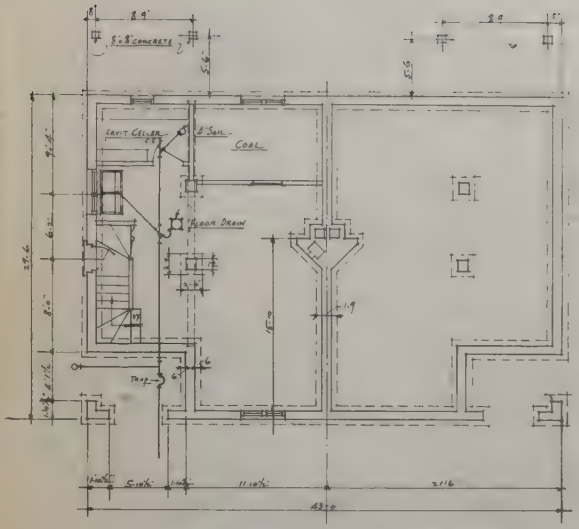
REAR ELEVATION

ONTARIO HOUSING COMMITTEE	
ELEVATIONS	SCALE 1/8"=1'0"
HOUSE FOR FARM HELP	D 1
DATE DEC 1918	



FIRST FLOOR PLAN

SECOND FLOOR PLAN



CELLAR PLAN

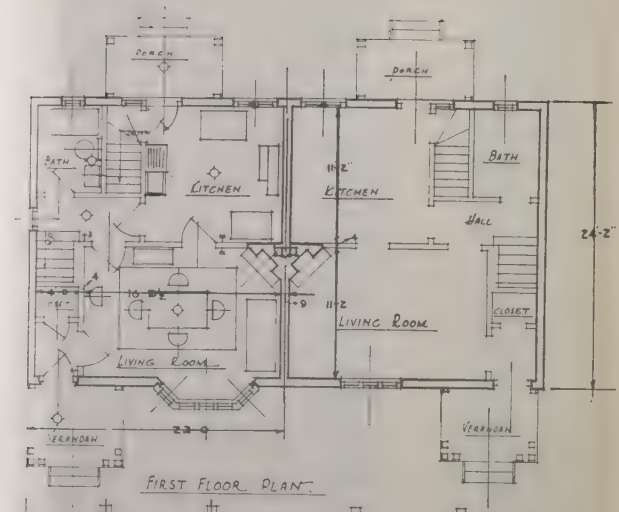
FOUNDATION PLAN

ONTARIO HOUSING COMMITTEE		
PLANS		SCALE 1/8"=1'0"
6 RM. SEMI DETACHED HOUSE		S.D.-1
DATE DEC. 1918	No 1 of 2 DRAWINGS.	

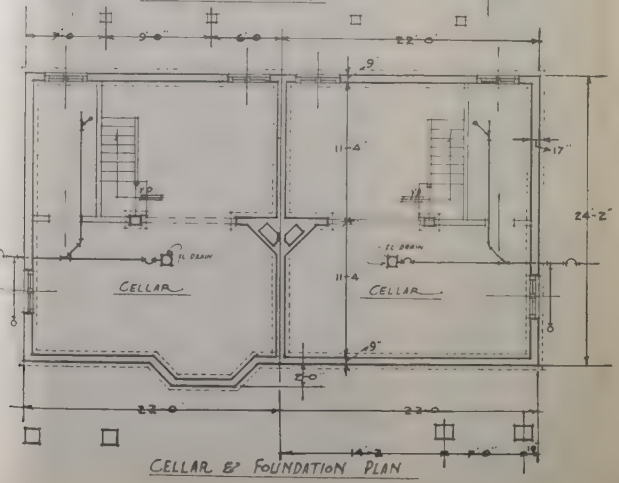
FRONT ELEVATION

SIDE ELEVATION

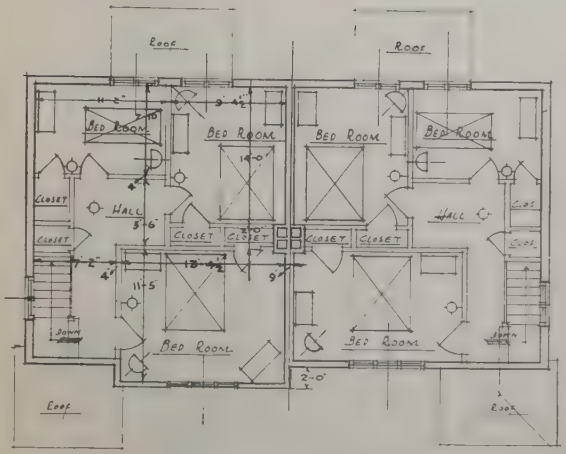
ONTARIO HOUSING COMMITTEE		
ELEVATIONS		SCALE 1/8"=1'-0"
6 RM SEMI. DETACHED HOUSE		S.D.1
DATE DEC 1918	No 2 of 2 DRAWINGS	



FIRST FLOOR PLAN



CELLAR & FOUNDATION PLAN



SECOND FLOOR PLAN

ONTARIO HOUSING COMMITTEE	
PLANS	SCALE 1/8-1-0
5 R.M. SEMI DETACHED HOUSE	S.D.2
DATE DEC 1918	No 1 of 2 DRAWINGS.

FRONT ELEVATION

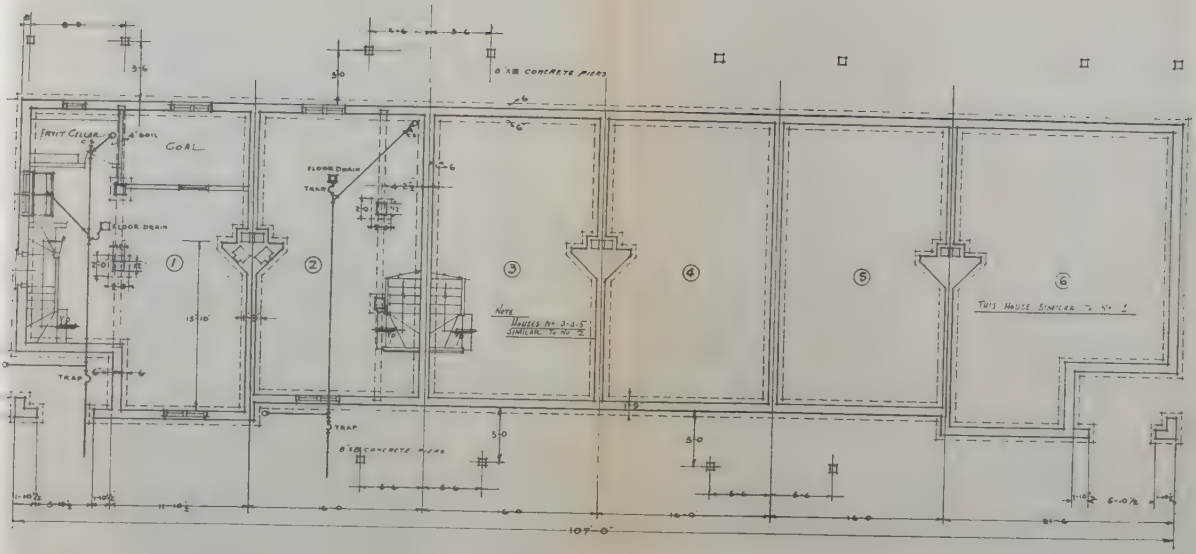
REAR ELEVATION

ONTARIO HOUSING COMMITTEE		
ELEVATIONS		SCALE 1/8"=1'-0"
5 R.M SEMI. DETACHED HOUSE		S.D. 2
DATE DEC. 9.18	N. 2 of 2 DRAWINGS.	

FRONT ELEVATION

SIDE ELEVATION

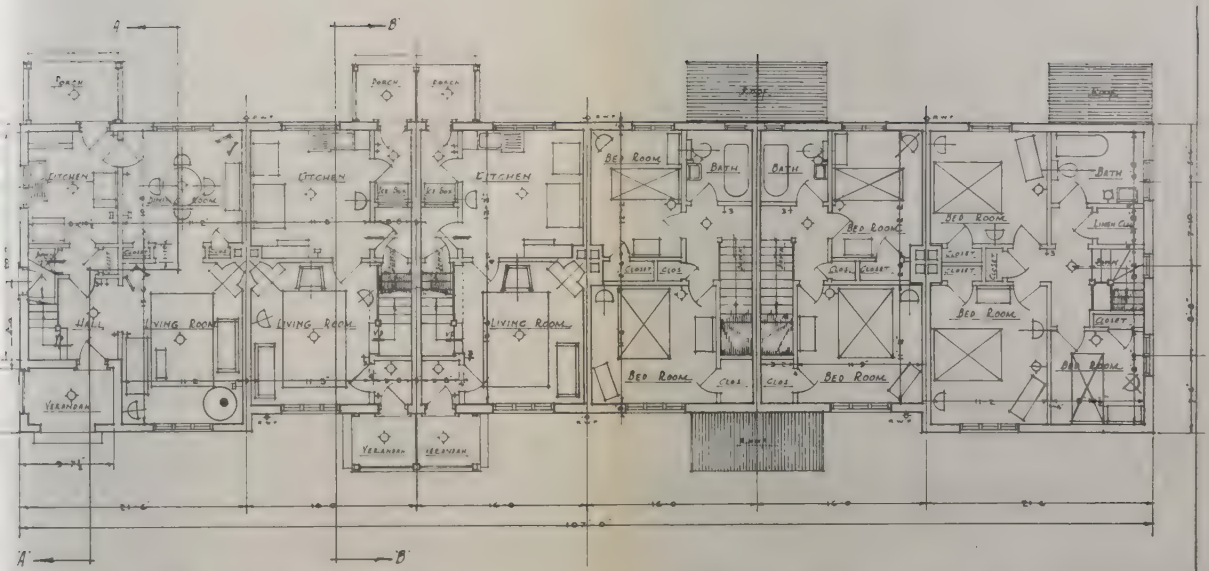
ONTARIO HOUSING COMMITTEE.		
ELEVATIONS		SCALE 1/8" = 1'-0"
5 R.M. HOUSE SEMI DETACHED		5-D-2-A
DATE MAY 19-46	ALTERNATE for Nos 2 of 2 Dwgs.	



CELLAR PLAN

FOUNDATION PLAN

ONTARIO HOUSING COMMITTEE	
PLANS	SCALE 1/8"=1'-0"
4 ROOM & 6 ROOM GROUP	G1
DATE DEC 1941 — No 1 of 5 DRAWINGS	



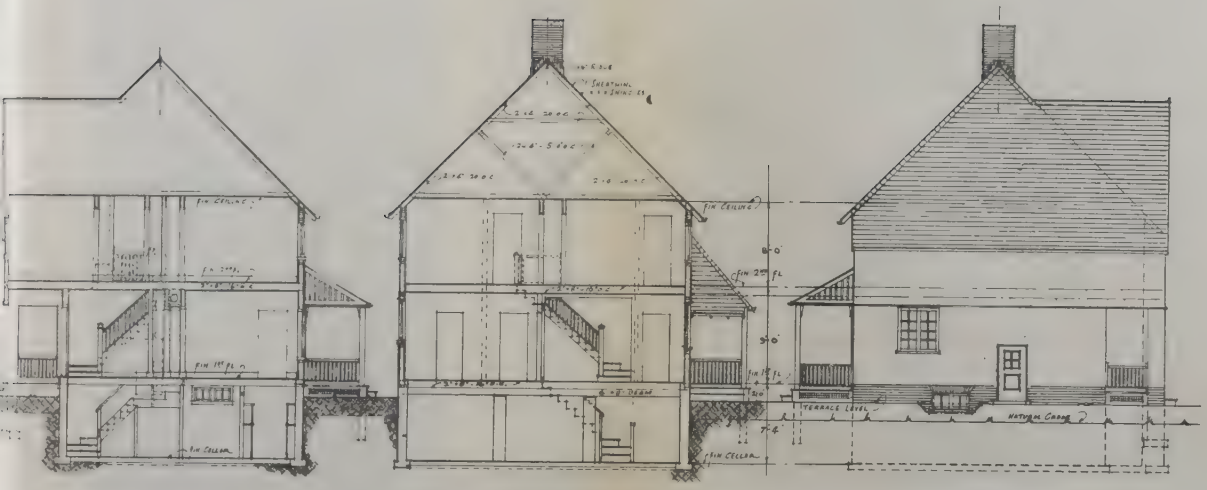
1/8 INCH PLAN OF FIRST FLOOR

1/8 INCH PLAN OF SECOND FLOOR.

ONTARIO HOUSING COMMITTEE		
PLANS		SCALE 1/8"=1'-0"
4 ROOM + 6 ROOM GROUP		G 1
DATE MCH 19	Nº 2 of 5 DRAWINGS.	

ONTARIO HOUSING COMMITTEE		
FRONT ELEVATION		SCALE 1/8"-1'-0"
A ROOM + 6 ROOM GROUP		G 1
DATE DEC 1918	No 3 of 5 DRAWINGS	

ONTARIO HOUSING COMMITTEE.	
REAR ELEVATION	SCALE 1/8" = 1'-0"
4 ROOM + 6 ROOM GROUP	G 1
DATE DEC 1/38 — No. 4 of 5 DRAWINGS.	

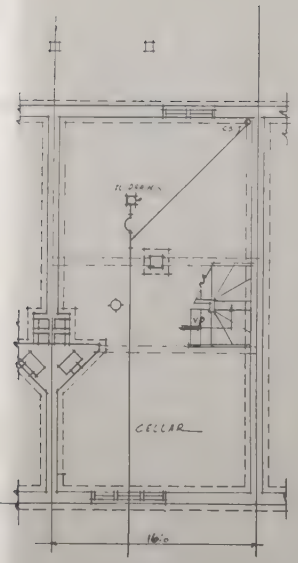


SECTION "A-A"

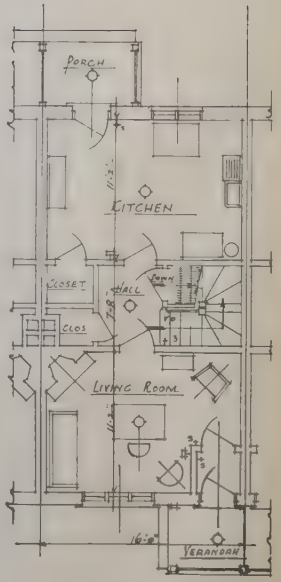
SECTION "B-B"

SIDE ELEVATION

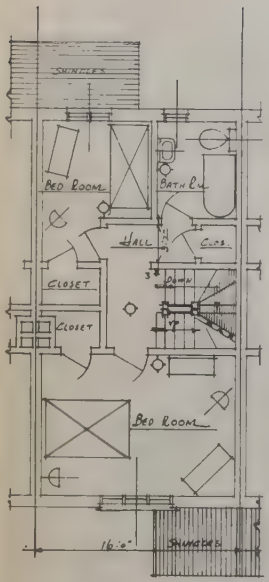
ONTARIO HOUSING COMMITTEE.		
SECTIONS & ELEVATIONS.		SCALE 1/8"-1'-0"
GROUP HOUSE.		G1
DATE DEC 1918	No. 5 of 5 DRAWINGS.	



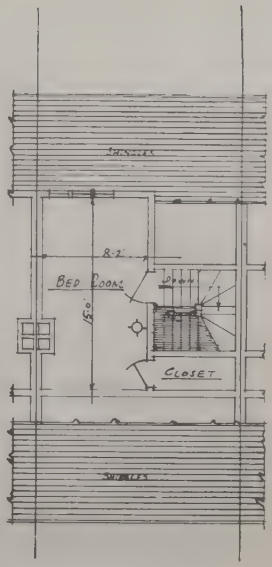
CELLAR & FOUNDATION PLAN



1ST FLOOR PLAN

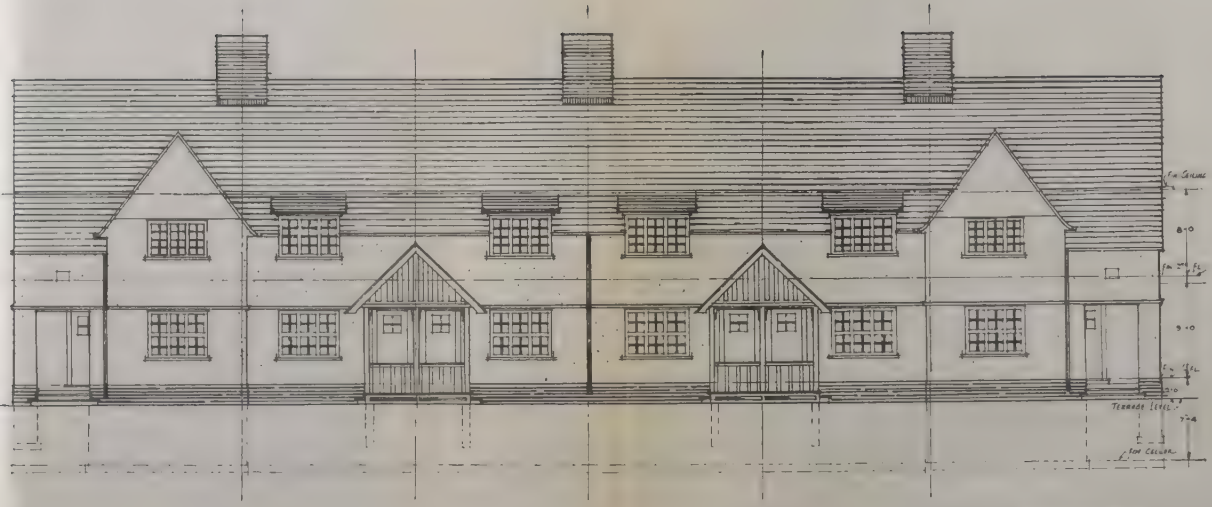


2ND FLOOR PLAN

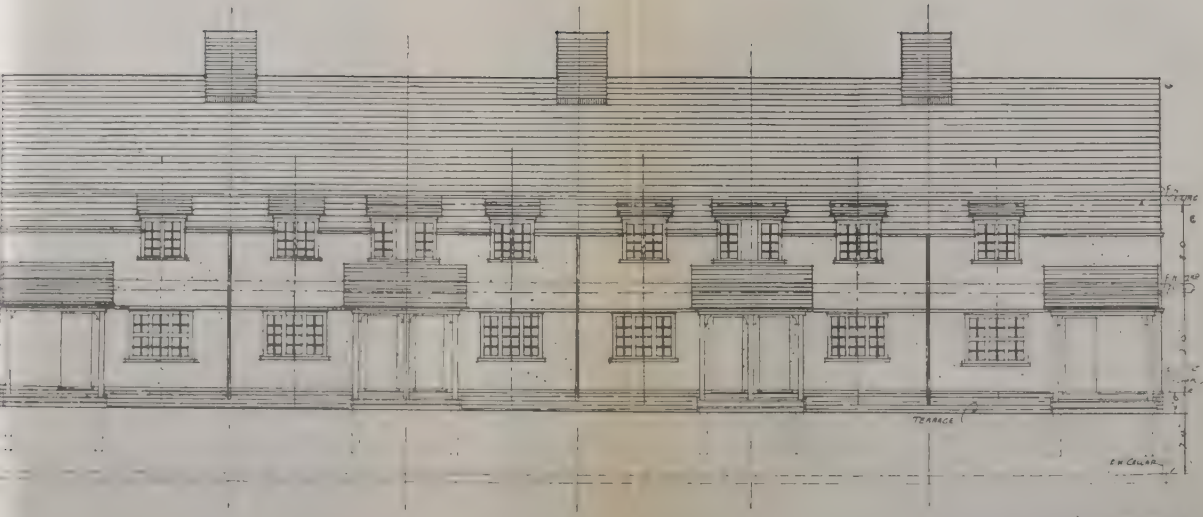


ATTIC PLAN.

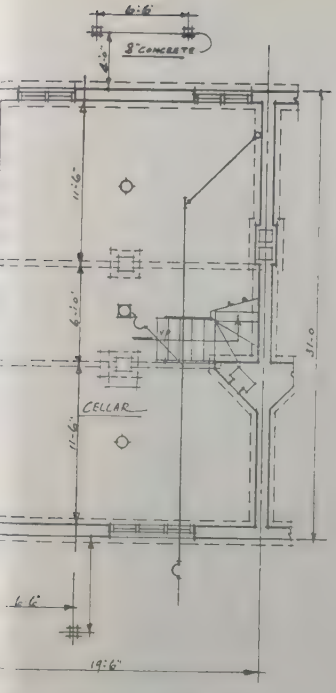
ONTARIO HOUSING COMMITTEE		
PLANS		SCALE 1/8"=1'-0"
5 ROOM ALTERNATE FOR GROUP HOUSE No G1.		G.1.A
DATE DEC 1918		



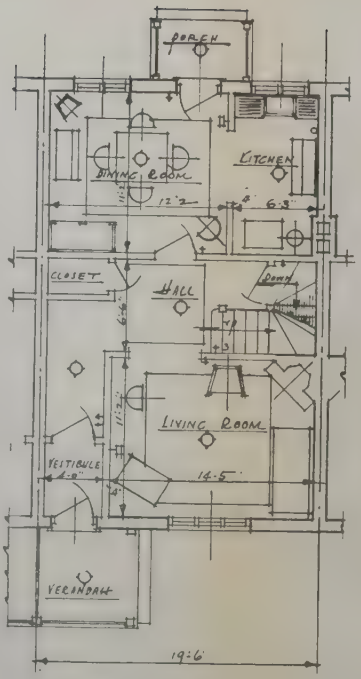
ONTARIO HOUSING COMMITTEE	
FRONT ELEVATION.	SCALE 1/8" = 1'0
4 R.M & 6 R.M GROUP.	G.1.A
DATE DEC. 1918 / ALTERNATE FOR N° 3 OF 5 DRAWINGS.	



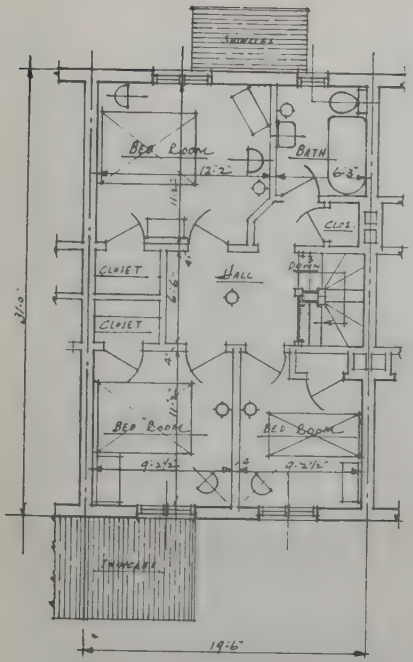
ONTARIO HOUSING COMMITTEE	
REAR ELEVATION	SCALE 1/8" = 1'-0"
4 RM + 6 RM. GROUP	G.1.A
DATE DEC 1918	ALTERNATIVE FOR No 4 of 5



CELLAR + FOUNDATION PLAN

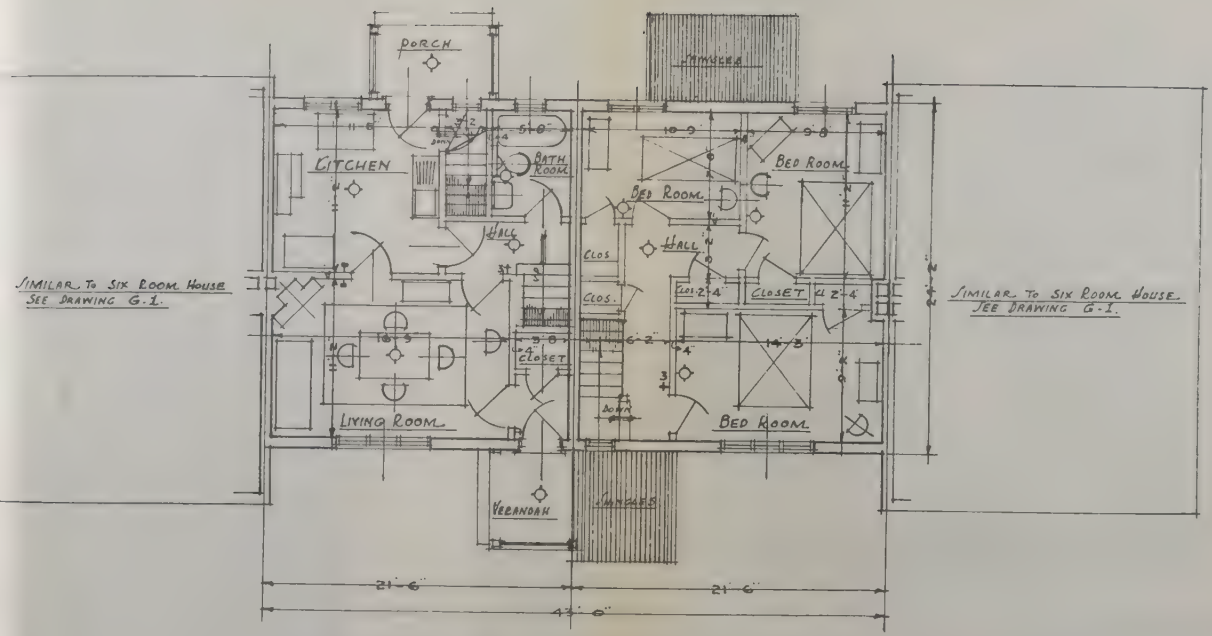


FIRST FLOOR PLAN



SECOND FLOOR PLAN

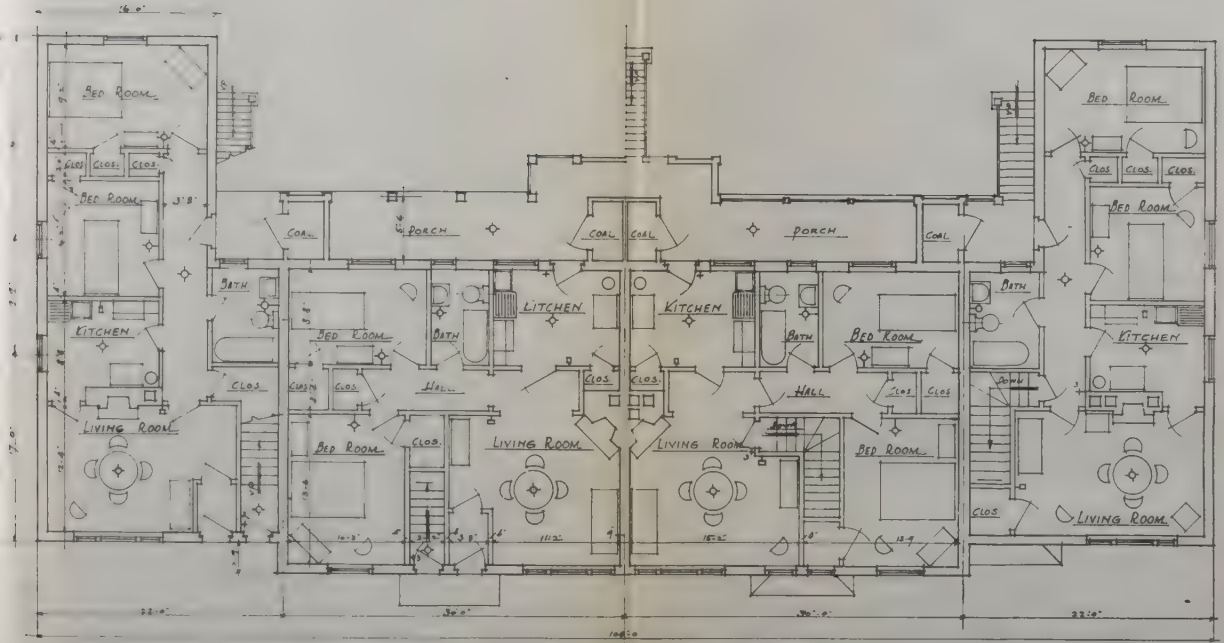
ONTARIO HOUSING COMMITTEE	
PLANS	SCALE 1/8" = 1'-0"
5 R.M. GROUP HOUSE	G1B.
DATE DEC 1918	No 1 of 1 DRAWING



FIRST FLOOR PLAN

SECOND FLOOR PLAN

ONTARIO HOUSING COMMITTEE	
PLANS	SCALE 1/8"=1'-0"
4 R.M. & 6 R.M. GROUP	G 2
DATE DEC. 1918	No. 1 of 1 DRAWING



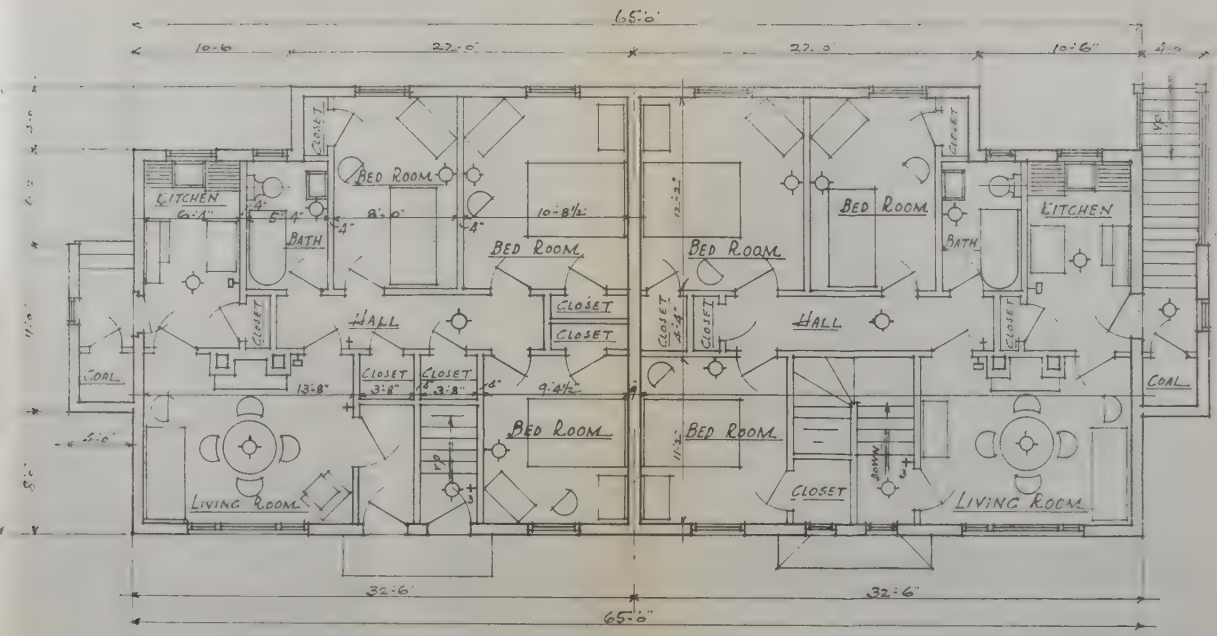
PLAN OF FIRST FLOOR

PLAN OF SECOND FLOOR

ONTARIO HOUSING COMMITTEE.	
PLANS	Scale 1/8" = 1'-0"
8 FAMILY. 4 RM. DUPLEX.	Dx 1.
DATE DEC 1919 No. 1. of 3 DRAWINGS.	

ONTARIO HOUSING COMMITTEE	
FRONT ELEVATION	SCALE 1/8" = 1'-0"
8 FAMILY. 4 RM. DUPLEX.	Dx 1
DATE. DEC. 1912 — No 2 of 3 DRAWINGS	

ONTARIO HOUSING COMMITTEE		
REAR. ELEVATION		SCALE. 1/8"=1'0"
8 FAMILY, 4 RM. DUPLEX		D x 1
DATE DEC. 1918	No 3 of 3 DRAWINGS	

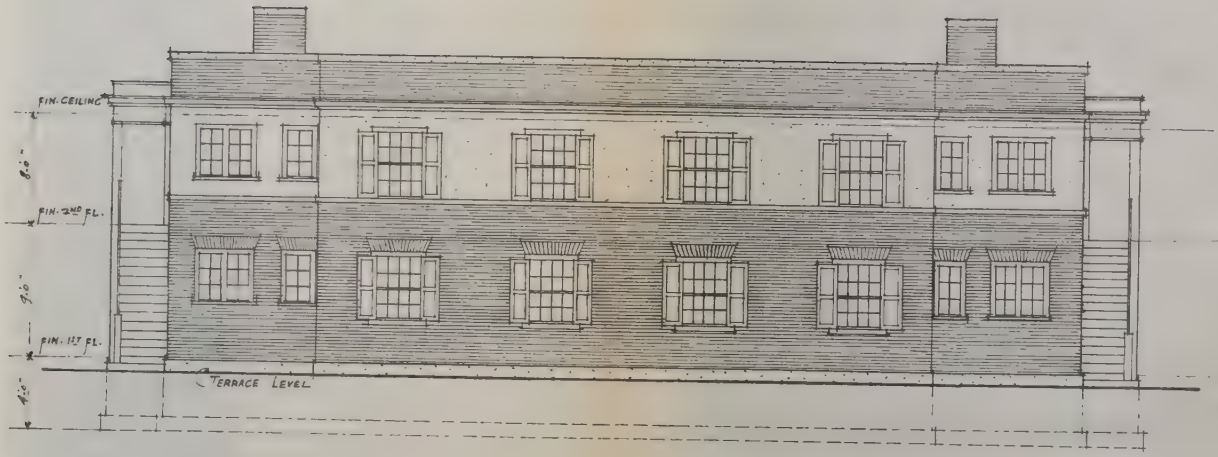


PLAN OF FIRST FLOOR

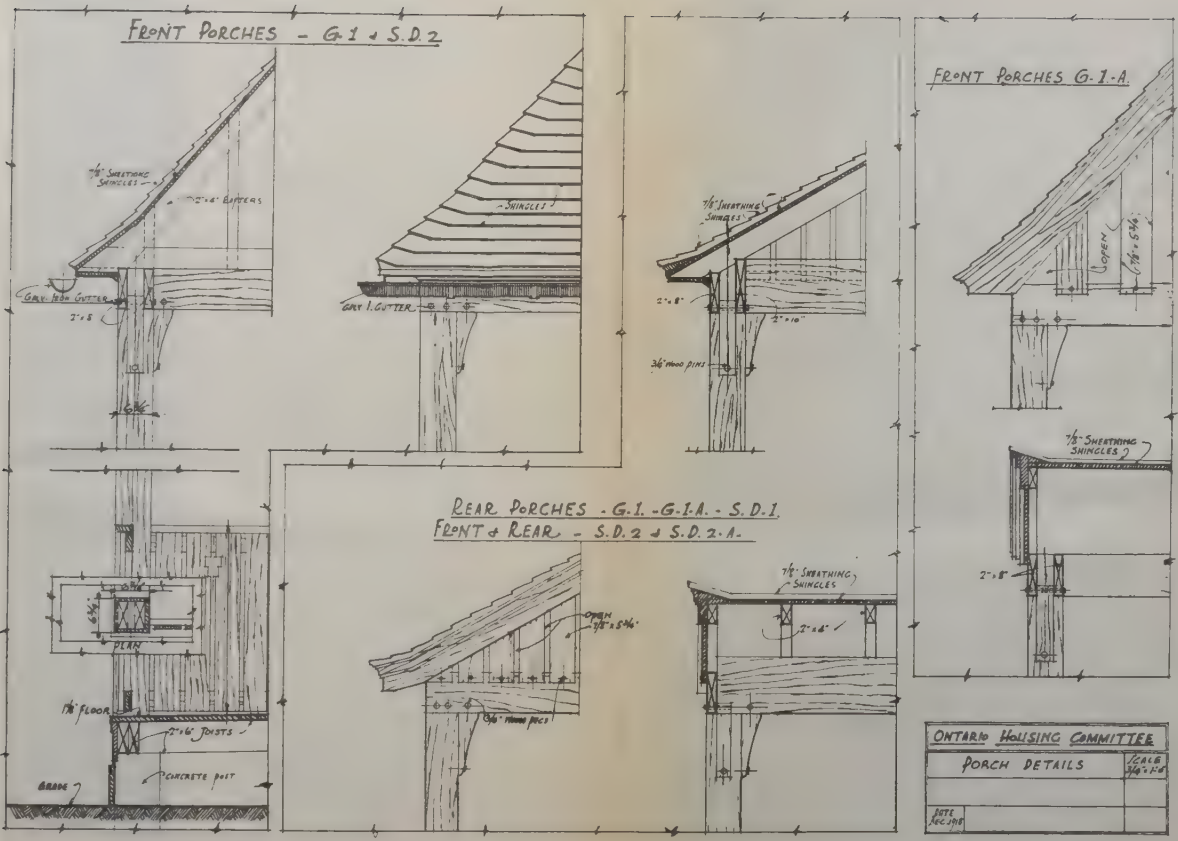
PLAN OF SECOND FLOOR

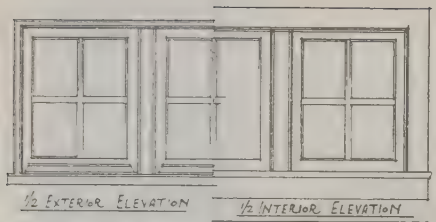
ONTARIO HOUSING COMMITTEE	
PLANS	SCALE 1/8" = 1'-0"
4 FAMILY 5 RM DUPLEX	D×2
DATE DEC. 1918 — No. 1 of 3 DRAWINGS	

ONTARIO HOUSING COMMITTEE		
FRONT ELEVATION		SCALE 1/8" = 1'-0"
4 FAMILY, 5 RM. DUPLEX.		D x 2
DATE DEC 1918	No 2 of 3 DRAWINGS	

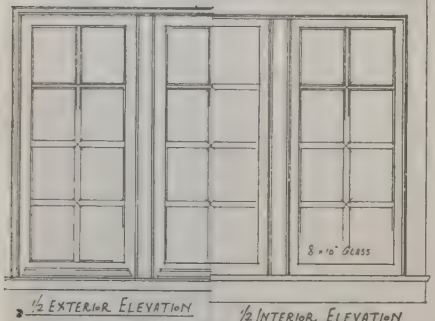


ONTARIO HOUSING COMMITTEE		
REAR ELEVATION		SCALE 1/8"=1'-0"
4 FAMILY 4 RM. DUPLEX		D.2
DATE DEC 1918	No. 3 OF 3 DRAWINGS.	


FRONT PORCHES - G.1 & S.D.2
7/8" SHEATHING SHINGLES
2"x6" RAFTERS
GALV. IRON GUTTER
2"x8"
SHINGLES
GALV. I. GUTTER
7/8" SHEATHING SHINGLES
2"x8"
2"x10"
3/4" WOOD PINS
FRONT PORCHES G.1-A.
OPEN
7/8"x5 1/4"
7/8" SHEATHING SHINGLES
2"x8"
REAR PORCHES - G.1. - G.1-A. - S.D.1
FRONT & REAR - S.D.2 & S.D.2-A.
PLAN
7/8" FLOOR
2"x6" JOISTS
GRADE
CONCRETE POST
OPEN
7/8"x5 1/4"
3/4" WOOD PINS
7/8" SHEATHING SHINGLES
2"x6"
ONTARIO HOUSING COMMITTEE
PORCH DETAILS
SCALE 3/4"=1'-0"
DATE
REVISIONS

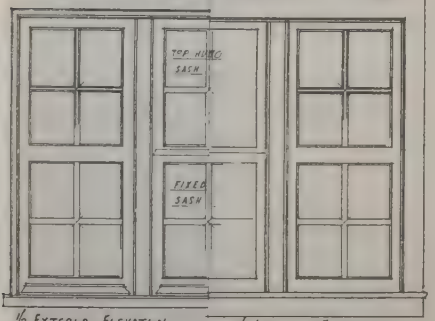


½ EXTERIOR ELEVATION ½ INTERIOR ELEVATION



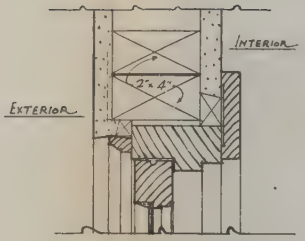
½ EXTERIOR ELEVATION ½ INTERIOR ELEVATION

ALL SASH TO OPEN

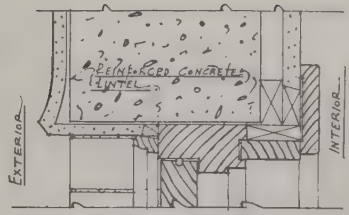


½ EXTERIOR ELEVATION ½ INTERIOR ELEVATION

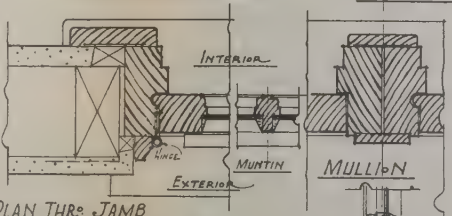
INCH SCALE ELEVATIONS



SECTION THRº HEAD



DETAIL SHOWING WINDOW HEAD WHERE LOWER STORY IS BRICK & UPPER STORY STUCCO.

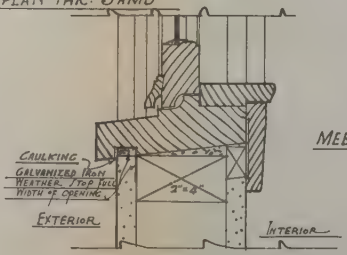


PLAN THRº JAMB

MEETING RAIL

NOTES.

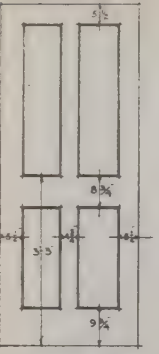
BALLOON FRAME 2"x4" STUDS. EXTERIOR, BISHOPRIC STUCCO BOARD, STUCCO FINISH. INTERIOR, LATH & PLASTER.



SECTION THRº SILL

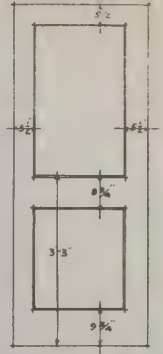
3 INCH SCALE WINDOW DETAILS.

ONTARIO HOUSING COMMITTEE.	
DETAILS OF	3/4" = 1' 3"
CASEMENT WINDOWS	
DATE JAN. 1918	



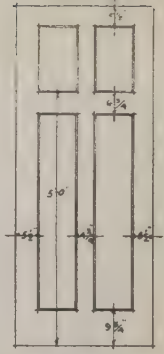
TYPE 'A'

A-1 2'-8" X 6'-8"
A-2 2'-6" X 6'-8"
A-3 2'-6" X 6'-6"
A-4 2'-4" X 6'-6"
A-5 2'-0" X 6'-6"



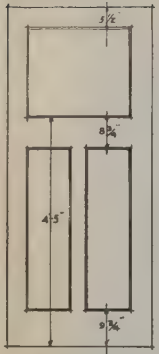
TYPE 'B'

B-1 2'-8" X 6'-8"
B-2 2'-6" X 6'-8"
B-3 2'-6" X 6'-6"
B-4 2'-4" X 6'-6"
B-5 2'-0" X 6'-6"



TYPE 'C'

C-1 2'-8" X 6'-8"
C-2 2'-6" X 6'-8"
C-3 2'-6" X 6'-6"
C-4 2'-4" X 6'-6"
C-5 2'-0" X 6'-6"



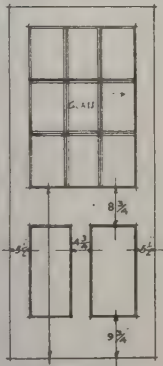
TYPE 'D'

D-1 2'-8" X 6'-8"
D-2 2'-6" X 6'-8"
D-3 2'-6" X 6'-6"
D-4 2'-4" X 6'-6"
D-5 2'-0" X 6'-6"

INTERIOR DOORS

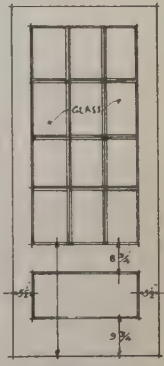
TYPE 'E'

E-1 2'-10" X 6'-10"
E-2 2'-8" X 6'-8"



TYPE 'F'

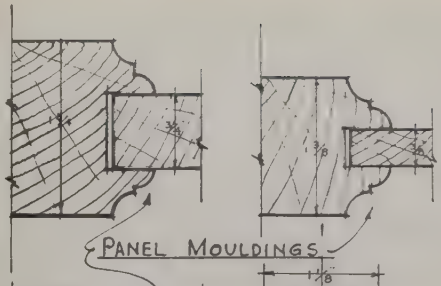
F-1 2'-10" X 6'-10"
F-2 2'-8" X 6'-8"

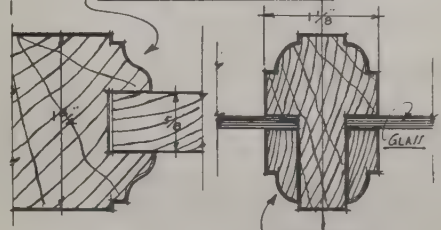


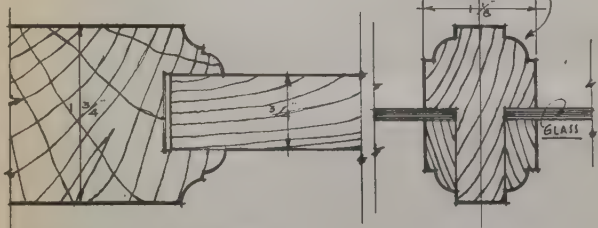
TYPE 'G'

G-1 2'-10" X 6'-10"
G-2 2'-8" X 6'-8"

EXTERIOR & VESTIBULE DOORS

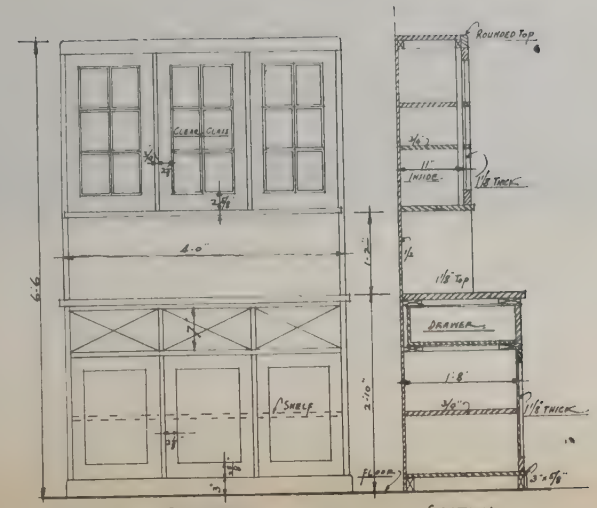




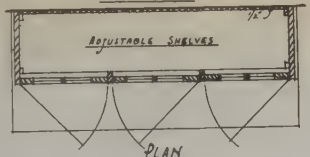


ALTERNATIVE MOULDING

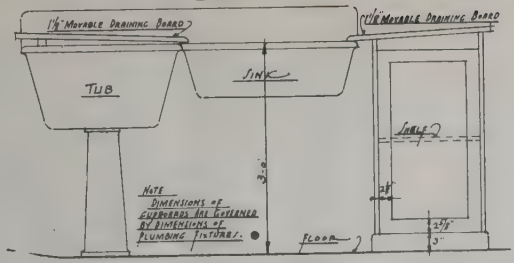
ONTARIO HOUSING COMMITTEE	
DETAILS OF	1/2" = 1' F.S.
INTERIOR & EXTERIOR DOORS	
DATE DEC 1918	



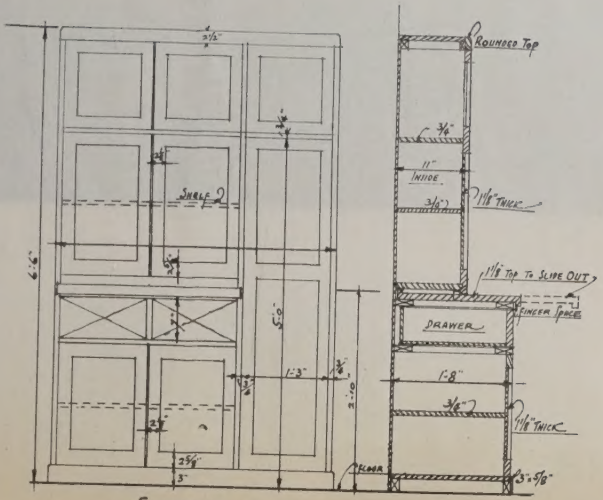
ELEVATION SECTION

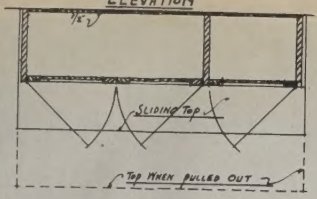


PLAN



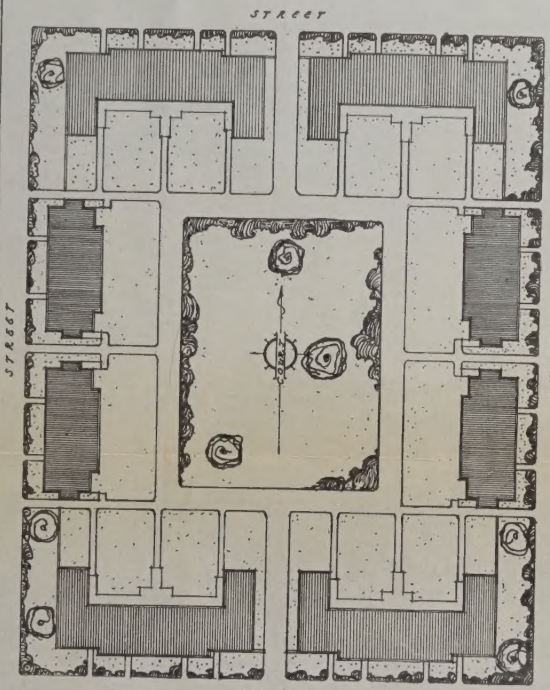
CUPBOARD WITH LAUNDRY TRAYS.





PLAN.

ONTARIO HOUSING COMMITTEE	
CUPBOARD DETAILS & COMBINATION WASH TUB & SINK	SCALE 3/8" = 1'-0"
DATE DEC 1918	



SUGGESTED GROUPING FOR DUPLEX HOUSES